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IDENTIFIERS	China; Netherlands; United States

ABSTRACT

This document contains papers from 23 of 25 symposia held at the 1995 Academy of Human Resource Development (HRD) conference. Keynote speeches, symposium 6, and symposium 25 are not included. The 23 symposia are on the following topics: (1) HRD town forum; (2) core directions in HRD; (3) university instruction in HRD; (4) evaluation in HRD; (5) leadership, executive, and management development; (6) university HRD programs; (7) contextual learning issues; (8) performance improvement; (9) team building; (10) diversity in the workplace; (11) HRD and business outcomes; (12) instructional technology; (13) work analysis and expertise; (14) work force issues facing HRD; (15) change process in organizations; (16) financial analysis of HRD; (17) instructional strategies; (18) research centers--ecstasies and agonies; (19) transfer of learning; (20) advancing the profession through journals--the editor-author-profession partnership; (21) the learning organization; (22) cross-cultural HRD; and (23) high involvement work teams. (MN)

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ED 398 354

AHRD

ACADEMY OF HUMAN RESOURCE DEVELOPMENT

1995 Conference Proceedings

March 2-5, 1995
St. Louis, MO

Elwood F. Holton III,
Editor

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AHRD

ACADEMY OF HUMAN RESOURCE DEVELOPMENT

1995 Conference Proceedings

March 2-5, 1995
St. Louis, MO

Conference Chair:
Richard A. Swanson
University of Minnesota

Proceedings Editor:
Elwood F. Holton III
Louisiana State University

Conference Planning Committee:
David Antonioni, Gene Audette, Laura Bierema, Janice Black, Warner Burke, Robert Brinkerhoff, Darlene Russ-Eft, John Henschke, Louis deJager, Ronald Jacobs, Maria Hruby, Wim Nijhof, Theresa Palmer, John Zuber

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From the Editor

Welcome to St. Louis! As you can see, the proceedings has grown considerably since last year, reflecting the tremendous growth of the Academy. Every paper that met the publication deadline is included. That adds up to nearly 100 papers and some 800 pages of new research, theories and debates to stimulate our dialogue. I think you'll be as excited as I am after you see the papers.

I hope you enjoy the new proceedings format. As always, we want your feedback so we can make it even better next year. Because its new, please take a minute to read these tips on using it.

Tips on Using the Proceedings:

1. **Papers are grouped by symposium number**. Symposium numbers can be found in the program immediately following this note.
2. **Only those sessions that have a number to the left of the title have papers included.** There are no papers for the keynote or lunch sessions.
3. **"Page numbers" are a combination of symposium number and paper number** within the symposium (e.g. 2-1 is the first paper in symposium number two). This format allows you to locate papers easily. You will find the numbers at the bottom of every page of each paper.
4. **The conference program is your table of contents.**
5. **An author index** is included in the back of the proceedings.
6. **Two symposia do not have any papers** (numbers 6 and 25).

Many thanks to all the authors for their cooperation in producing the final papers and tolerating my picky requests. Enjoy the conference and these outstanding papers!

Ed Holton

Elwood F. Holton III
Proceedings Editor

1995 CONFERENCE PROGRAM

St. Louis Airport Hilton Hotel March 2 - 5, 1995

AHRD

The Academy of Human Resource Development
8140 Burnet Road, P.O. Box 9598
Austin, Texas 78766
USA
512-323-2736 Fax 512-454-4221

OVERVIEW of the CONFERENCE

"HRD as a Performance Partner.....at the organization, process, and individual levels."

	Thursday March 2, 1995	Friday March 3, 1995	Saturday March 4, 1995	Sunday March 5, 1995
7:00-8:15 am		• AHRD Committee Breakfasts • Breakfast Forum: Changing Direction of the Profession	Food-N-Thought: Join in on book discussion while you have your meal.	• AHRD Board Member Breakfast • Breakfast Forum: Changing Direction of the Profession
8:30- 10:00am KEYNOTE PRESENTATIONS		**Andrew Van de Ven**, Prof of Strategic Mgt & Org, Uof Minn *HRD as a PARTNER at the ORGANIZATION LEVEL*	**Allan H. Church**, Principal, W.W. Burke Associates, Inc. *HRD as a PARTNER at the PROCESS LEVEL*	**Irwin L. Goldstein**, Prof & Dean of Behav Science, Uof Maryland *HRD as a PARTNER at the INDIVIDUAL LEVEL*
10:15-11:45am		SYMPOSIUMS • [2] Core Directions in HRD • [3] University Instruction HRD • [4] Evaluation in HRD	SYMPOSIUMS • [12] HRD & Bus Outcomes • [13] Instructional Technology • [14] Work Analysis Expertise • [15] W'force Issues Facing HRD	SYMPOSIUMS • [23] Cross-Cultural HRD • [24] High Involve. Work Teams • [25] Case Study Research
12:00noon	Conference Registration Opens (12noon-8:00pm 12noon- 3:00pm AHRD Board Member Mtg.	Food-N-Thought: Join in on book discussion while you have your meal.	Food-N-Thought: Join in on book discussion while you have your meal .	Lunch & hotel checkout 1-1:30pm Closing "Town Forum"
1:30-3:00pm	3-4:00pm Showcase of Host University , U. of Missouri-St. Louis HRD Program	SYMPOSIUMS • [5] Leadership & Mgt Develop • [6] HRD in China • [7] University HRD Programs • [8] Contextual Learning Issues	SYMPOSIUMS • [16] Change Process in Orgs. • [17] Financial Analysis of HRD • [18] Instructional Strategies • [19] HRD Research Centers	1:30-2:30pm AHRD Business Mtg.
Break				
3:30-5:00pm	4-4:30 Reception for HRD Graduate Students by Uof Missouri-St. Louis	SYMPOSIUMS • [9] Performance Improvement • [10] Team Building • [11] Diversity in the Workplace	SYMPOSIUMS • [20] Transfer of Learning • [21] HRD Journals • [22] Learning Organization	
Evening	6-7:00 pm Grand Reception & Conference Overview 7-8:30pm • [1] HRD Town Forum	Free Evening 6:00pm HRDQ Editorial Board Mtg & Dinner	6-8:00pm President's Dinner for all Conference Attendees (included in registration)	

- The 25 conference symposiums are numbered sequentially [1] to [25] here, on the full "Conference Program," and in the "Conference Proceedings."
- "Conference Central" is always open! ....Registration, exhibitor bookstore, and coffee shop.

AHRD 1995 CONFERENCE PROGRAM

Theme: "HRD as a Performance Partner.........

Performance Partner at the organization level, at the process level, and at the individual level.

THURSDAY

1:00- 8:00 pm Conference Registration

1:00-3:00 pm AHRD Board Meeting

3:00-4:00 pm Showcase of the Conference Host University: HRD Program at the University of Missouri- St. Louis

4:00-4:30 pm Reception for All Graduate Students

6:00-7:00 pm **GRAND RECEPTION** and Conference Overview *(sandwiches and beverages provided)*
Sponsored by the University of Missouri- St. Louis, Host University

[1] **HRD TOWN FORUM** 7:00-8:00 pm Facilitator: Peter A. DeLisle, University of Illinois

The Case for Learning
Karen E. Watkins, AHRD President, University of Georgia

The Case for Performance
Richard A. Swanson, AHRD President-Elect & Conference Chair, University of Minnesota

Open Forum Among Academy Members
Peter A. DeLisle, Moderator, University of Illinois

FRIDAY

Friday 7:15 am AHRD Committee Breakfasts

Friday 7:15 am **Breakfast Forum: The Changing Direction of the Profession**
(pull up a chair at the designated table in the restaurant)
Facilitators: Jerry Gilley, Trilogy Consulting Group & Richard J. Torraco, University of Nebraska

Friday 8:30-10:00 am KEYNOTE...*HRD as a performance partner at the organization level:*

Andrew H. Van de Ven, Professor of Strategic Management, University of Minnesota

"Organizational Innovation, Learning, and Leadership"

Andy Van de Ven, Professor in the Carlson School of Management, has been undertaking a major longitudinal research program on the management of innovation since 1982. In addition to his work in innovation, Andy is known for developing the Nominal Group Technique, and for his work in program planning, problem solving, and inter-organizational relationships.

Moderator for this Keynote Session: Oscar G. Mink, University of Texas at Austin

Friday 10:15-11:45 am Symposiums

[2] **CORE DIRECTIONS IN HRD** Facilitator: R. Wayne Pace, Brigham Young University

High Performance Work Systems

Martha A. Gephart, American Society for Training and Development

The New Paradigm of Human Resource Development: A Holistic Model

Holly E. Nordquist, University of Minnesota

Designing Action Reflection Learning Research: Balancing Research Needs & Real-World Constraints

Lyle Yorks, Eastern Connecticut State University
Victoria Marsick, Teachers College, Columbia University
Glenn Nilson, Eastern Connecticut University
Judy O'Neil, Leadership in International Management, Ltd.
Robert Kolodny, Leadership in International Management, Ltd.

[3] **UNIVERSITY INSTRUCTION IN HRD** Facilitator: Neal Chalofsky, George Washington U.

Using Critical Incidents in Teaching HRD: A Method for Fostering Reflection and Dialogue

Hallie Preskill, University of New Mexico

Using an Immediate Feedback System in Managerial Education

David Antonioni, University of Wisconsin - Madison

Instructional Use of Compressed Video Teaching: A Responsive Evaluation

Larry M. Dooley, Texas A & M University

Team-Teaching in Graduate Level HRD: Participant's Attitudes and Perceptions

Tim Hatcher, University of Arkansas
Barbara Hinton, University of Arkansas
James Swartz, University of Arkansas

[4] **EVALUATION IN HRD** Facilitator: Nancy Dixon, George Washington University

Reliability Testing of Multirater Feedback

Wim J. Nijhof, University of Twente (The Netherlands)
Anne Jager, University of Twente (The Netherlands)

In Search of an Integrative Model for HRD Evaluation

Elwood F. Holton, III, Louisiana State University

Building on Training Pillars: Applying TQM in HRD

Douglas H. Smith, Florida International University
Jo D. Gallagher, Florida International University

360 Degree Feedback Evaluation: New Data, New Insights

Gary N. McLean, University of Minnesota

Friday 12:00 noon "Food-N- Thought" Luncheons

(pull up a chair at the designated table in the restaurant--- book titles & discussion leaders)

Structured On-The-Job Training; Unleashing Employee Expertise in the Workplace *by R. Jacobs*

Discussion leader: Ron Jacobs, Ohio State University

The Bell Curve: Intelligence and Class Structure in American Life *by R. Hermstein & C. Murray*

Discussion leader: Kay Bull, Oklahoma State University

Friday 1:30-3:00 pm Symposiums

[5] **LEADERSHIP, EXECUTIVE & MANAGEMENT DEVELOPMENT**
Facilitator: Barbara L. Swanson, Swanson & Associates, Inc.
Extending Leadership Development Beyond the Classroom: Looking at Process and Outcomes.
Dianne P. Young, Center for Creative Leadership
Nancy M. Dixon, George Washington University
The Development of Standards of Competence for Senior Management
Gill Lane, Henley Management College (England)
Alan Robinson, Henley Management College (England)
No Longer Solo Practice: Leadership Development of Physician Executives
Mitchell Kusy, University of St. Thomas
Louellen N. Essex, University of St. Thomas
Thomas J. Marr, Partners Consulting Group, Ltd.
On A Clear Day You Can Have A Vision: A Visioning Model for Everyone
Richard K. Allen, Central Michigan University
How Do Selected HRD Professionals View the State of the Succession Planning Art?
William J. Rothwell, Pennsylvania State University

[6] **HRD IN CHINA: VIEWS FROM FOUR NATIONS** Facilitator: Michael Marquardt, George Washington
HRD in the People's Republic of China: Study Trip Overview
R. Wayne Pace, Brigham Young University
HRD in Columbia and Contrasts with China
M. Vickie Caicedo de Quevedo, Principal, Recursos de Capacitacion (Columbia)
HRD in Ghana and Contrasts with China
Paul R. Keteku, Ashanti Goldfields Company, Ltd. (Ghana)
HRD in England and Contrasts with China
Tony Mills, Association of Business Executives (England)

[7] **UNIVERSITY HRD PROGRAMS** Facilitator: Larry M. Dooley, Texas A &M
Genesis and Continuance of an HRD Academic Program: A Longitudinal Study
Verna J. Willis, Georgia State University
William M. Kahnweiler, Georgia State University
Theory and Practice on Preparing HRD Professionals
John A. Henschke, University of Missouri - St. Louis
Responding to Business Needs: Strategies to Facilitate Group Learning in Organizations
Brenda S. Gardner, Xavier University
Haron J. Korth, Xavier University
Evaluation and Evolution of a HRD Program
Robert C. Schwindt, Pittsburg State University

[8] **CONTEXTUAL LEARNING ISSUES** Facilitator: Michael Leimbach, Wilson Learning
Developing Systems Thinking Ability in Organizations
Carol Ann Zulauf, Suffolk University
Leveraging Quality Initiatives Through Action Technologies
Tom J. Shindell, Texas Department of Health
Robert L. Dilworth, Virginia Commonwealth University
Career Development Needs of Safety Professionals
Joe W. Kotrlik, Louisiana State University
Cyndi H. Gaudet, University of S.W. Louisiana
Instructional Design in the Context of Situated Learning
Sean Courtney, University of Nebraska- Lincoln
A Model for Developing Foreign Language HRD Programs
Zita Justinskas Halka, Corporate Language Consultant
Robert E. Nolan, Oklahoma State University

Friday 3:30-5:00 pm Symposiums

[9] **PERFORMANCE IMPROVEMENT** Facilitator: Richard J. Torraco, University of Nebraska

Performance Technology: Isn't it Time We Found Some New Models?

William J. Rothwell, Pennsylvania State University

Blocks to Improving Performance: Results of an Experientially-Based Group Exercise Using Gilbert's Behavior Engineering Model

Peter J. Dean, Pennsylvania State University- Great Valley Campus
Martha Ray Dean, Pennsylvania College of Bible
Rebecca Rebalsky, Pennsylvania State University- Great Valley Campus

Emerging Issues in the Reengineering of Corporate Performance Evaluation and Development

Margaret L. Bailey, Northern Illinois University
Danilo M. Baylen, Northern Illinois University

The Human Resource Developer and the Engineer: New Partners for a New Century

Peter A. DeLisle, University of Illinois at Urbana-Champaign

[10] **TEAM BUILDING** Facilitator: Susan Dougherty, Center for Effective Power

The Relationship Between Productivity and Work Team Autonomy and Team Process Effectiveness

Candice Logue Phelan, Lockheed Missiles and Space Company, Inc.

A Team Assessment Instrument

Jeff Allen, University of North Texas

Developing A Systems Approach for Dysfunctional Teams

David S. Wright, Illinois State University
Paul E. Brauchle, Illinois State University

The Myth of Self-Directed Work Teams and the Ineffectiveness of Team Effectiveness Training: An Argument with Special Reference to Teams that Produce Knowledge

Ann K. Brooks, University of Texas at Austin

Successful Teams, But at What Level? An Evaluation Model of Team Success at an International High-Tech Firm

Oma Morey, University of Texas at Austin

[11] **DIVERSITY IN THE WORKPLACE** Facilitator: Laura Bierema, Washtenaw Community College

The Status of Valuing and Managing Diversity in Fortune 500 Manufacturing and Fortune 500 Service Organizations

Sandra J. Johnson, Personnel Decisions, Inc.

A Theory of Diversity

Christopher Washington, Ohio State University

Work Force Diversity in Fortune 500 Corporations in Minnesota: Concepts and Practices

Karin M. Tomervik, University of Minnesota

Race and Ethnicity-related Cultural Diversity Training Programs: A Topology

Larry G. Martin, University of Wisconsin - Milwaukee

Friday - **Free Evening!**

Friday - 6:00 pm **HRDQ Editorial Board Dinner Meeting**

SATURDAY

Saturday 7:15 am **"Food-N-Thought" Breakfasts**

(pull up a chair at the designated table in the restaurant--- book titles & discussion leaders)

Effective Succession Planning *by William Rothwell*

Discussion leader: Bill Rothwell, Pennsylvania State University

Punished By Rewards *by Alphie Kohn*

Discussion leaders: Eva Blair, Ford Motor Company & Felicia Stilley, Tulsa Glass Company

Saturday 8:30-10:00 am – KEYNOTE.... *HRD as a performance partner at the process level:*

Allan H. Church, Principal, W. W. Burke Associates, Inc.

"Achieving Synergy Between Change Processes and Process Improvement"

Allan Church received his Ph.D. in organizational psychology from Columbia University. Prior to joining Burke Associates, he worked for IBM in Communications Measurement & Research and Corporate Personnel Research. He latest article, in press with the HRDQ, focuses on managerial and work group behaviors.

Moderator for this Keynote Session: Victoria Marsick, Columbia University

Saturday 10:15 -11:45 am Symposiums

[12] **HRD AND BUSINESS OUTCOMES** Facilitator: Elwood Holton III, Louisiana State University

HRD Alignment: A Systemic Assessment of HRD in Organizations
Richard J. Torraco, University of Nebraska- Lincoln
HRD Policy Making in Companies: An Interpretation of the Differences
Ida Wognum, University of Twente (The Netherlands)
Impact Map: Versatile Tool to Link HRD with Business Outcomes
Sharon J. Korth, Xavier University
Strategic Quality Training - The Transformation of the Connecticut State Department of Labor
Sandra L. Hastings, Connecticut Department of Labor
Ann B. Nichols, Connecticut Department of Labor
Managing Organizational Learning to Improve Performance
K. Peter Kuchinke, University of Minnesota

[13] **INSTRUCTIONAL TECHNOLOGY** Facilitator: C.J. Wallington, Rochester Institute of Technology

The Effectiveness of an Electronic Performance Support System on Learning and Performance
Theo J. Bastiaens, University of Twente (The Netherlands)
Wim J. Nijhof, University of Twente (The Netherlands)
Harmen J. Abma, University of Twente (The Netherlands)
Predictors of Computer-Related Trainee Success and Optimum Training Techniques
Steven John Simon, Oklahoma City University
A Normative Model for Selecting HRD Multimedia
Theresa M. Palmer, Illinois State University
Dent M. Rhodes, Illinois State University
Computer-Based Instructional Design Principles & the Adult Learner: Guidelines for Future Research
Reid A. Bates, Louisiana State University
Dian Seyler, Louisiana State University
Elwood F. Holton III, Louisiana State University

[14] **WORK ANALYSIS AND EXPERTISE** Facilitator: Darlene Russ-Eft, Zenger Miller

The Setting of Goals for Skill Acquisition
Howard J. Klein, Ohio State University
Peg Thoms, Pennsylvania State University - Erie Campus
Use of Work Analysis Tools as a Foundation of Interventionist and Noninterventionist HR Functions
Mark M. Lewis, University of Minnesota
Effectiveness of Employee Selection Process for Large Group and Individual Hires
Douglas R. Carr, Ohio State University
Maria T. Hruby, Ohio State University

[14] WORK ANALYSIS AND EXPERTISE-- *continued (10:15-11:45 am)*
The Use of Pre-Hire Assessment Tools for Manufacturing Direct Labor
August P. Bruehlman, Colorado State University
Gary D. Geroy, Colorado State University
Sheila Landfair Mueller, Colorado State University
A Legally Defensible Job Analysis Using atCODAP
James E. Sage, Ohio State University
Tonette S. Rocco, Ohio State University

[15] WORKFORCE ISSUES FACING HRD Facilitator: Eugene Audette, University of St. Thomas
Meaning Construction and Personal Transformation: Alternative Dimensions of Job Loss
Terri A. Deems, University of Nebraska- Lincoln
Earning A Living or Building a Life? Reinterpreting the Meaning of Work in the Practice of Workplace Education
John M. Dirkx, University of Nebraska- Lincoln
An Examination of HRD Practitioners' Reasoning Regarding Ethical Dilemmas
Kimberly S. McDonald, Indiana-Purdue University
The Status of Intercultural Communication Training in Fortune 500 Industries
Jean Rowe McFarland, University of Minnesota

Saturday 12:00 noon **"Food-N-Thought" Luncheons**
(pull up a chair at the designated table in the restaurant--- book titles & discussion leaders)
Flexibility in Training and Vocational Education *by Wim J. Nijhof*
Discussion leader: Wim Nijhof, University of Twente
Managing the Unknowable: Strategic Boundaries Between Order & Chaos in Orgs. *by Stacey*
Discussion leader: Deane Gradous, University of St. Thomas

Saturday 1:30-3:00 pm Symposiums

[16] CHANGE PROCESS IN ORGANIZATIONS Facilitator: Toni Powell, Barry University
The Effectiveness of Change Agents as Affected by Strategic Interactions
Marie A. George, University of Scranton
TQM Binds: Failed Quality Initiatives
Tom J. Shindell, Texas Department of Health
Garry L. McDaniel, Advanced Micro Devices
The Implications of Delay in the Organizational Change Process
Jenny Auger Maw, Hillcrest Healthcare Corporation
Journey from Satisfaction to Performance in HRD: Becoming a World-Class Business Partner
Timothy McClernon, CIGNA HealthCare

[17] FINANCIAL ANALYSIS OF HRD Facilitator: Ronald L. Jacobs, Ohio State University
Return on Investment-- Beyond the Four Levels!
Jack J. Phillips, Middle Tennessee State University
Interpreting A Compact Cost-Benefit Analysis that Assesses the Performance Value of Training
Paul E. Brauchle, Illinois State University
Economic Returns of Education and Allocation of Labor
Joop G. Odink, University of Amsterdam (The Netherlands)
Ruurd Kunnen, Organization for Strategic Labor Market Research (The Netherlands)
The Impact of Values on the Financial Analysis of HRD
Jennifer Gail Parsons, Oklahoma State University

[18] INSTRUCTIONAL STRATEGIES Facilitator: Joseph Kessels, University of Leiden (The Netherlands)

Developing Supervisory Expertise: The Effect of An Inductive Versus Deductive Training Method on the Job Behaviors of Supervisors

Margaret C. Lohman, University of Iowa

Identifying Instructional Criteria in Corporate Settings

Clark J. Hickman, University of Missouri- St. Louis

Exploring the Use of Training Games

James J. Kirk, Western Carolina University
Harold L. Shoemaker, University of Tennessee

Structured On-The-Job Training: Domains and Factors

Jong Cheul Yang, University of Minnesota

[19] RESEARCH CENTERS: Ecstasies, & Agonies Facilitator: Gene Roth, Northern Illinois University

Research: The Thin Blue Line Between Rigor and Reality

Michael Leimbach, Director of Research, Wilson Learning Corporation

Zenger Miller's Research Center

Darlene Russ-Eft, Director of Research Services, Zenger-Miller

ASTD's Research Program: Performance and Workplace Learning

Martha A. Gephart, V.P. of Research, American Society for Training & Development
Lara Hewitt, American Society for Training & Development

Human Resource Development Research Center: A Decade of Innovation

Richard A. Swanson, Center Director, University of Minnesota

The Henley Management Research Center

David Birchall, Center Director, Henley Management College (England)

Saturday 3:30-5:00 pm Symposiums

[20] TRANSFER OF LEARNING Facilitator: David Antonioni, University of Wisconsin - Madison

Supervisory Support as a Transfer Enhancing Activity: Synthesis of Four Research Papers

Esther W. M. Gielen, University of Twente (The Netherlands)
Marcel R. van der Klink, University of Twente (The Netherlands)

Transfer of Training: The Impact of Supervisory Support, Supervisory Involvement, Situational Constraints, and Self-Efficacy on the Application of Technical Skill Training

Sandra L. Hastings, Connecticut Department of Labor
Barry G. Sheckley, Connecticut Department of Labor
Anne B. Nichols, Connecticut Department of Labor

Factors in the Organizational Climate that Motivate the Transfer of Training

Gary D. Geroy, Colorado State University
Catherine J. Penna, Colorado State University

Management Influence on the Transfer of Training

Emma M. Branderhorst, University of Twente (The Netherlands)
Ida Wognum, University of Twente (The Netherlands)

[21] ADVANCING THE PROFESSION THROUGH JOURNALS: The Editor-Author-Profession Partnership

Facilitator: Wim J. Nijhof, University of Twente (The Netherlands)

Human Resource Development Quarterly

Gary N. McLean, Editor

Performance Improvement Quarterly

Boyd Richards & William Coscarelli, Editors

Adult Education Quarterly

Sean T. Courtney & John Dirkx, Editors

[22] **LEARNING ORGANIZATION** Facilitator: Verna J. Willis, Georgia State University

Process of Organizational Learning: A Framework for the Development of Policies and Techniques in a Learning Organization Perspective
Massimo Tomassini, Eurotechnet (Italy)

Implementing The Learning Organization: A Case Study
Laura L. Bierema, Washtenaw Community College
David M. Berdish, Ford Motor Company

Coaching the Un-coachables in the Learning Organization
John A. Zuber, University of Minnesota
Roger Miller, University of Minnesota

Feedback Seeking Behavior: Review of the Literature from the HRD Perspective
Svjetlana Madzar, University of Minnesota

The Role of Managers as Trainers in the Learning Organization: Implications for HRD
Andrea Ellinger, University of Georgia
Maria Cseh, University of Georgia

Saturday 6:00-8:00 pm PRESIDENT's DINNER for all CONFERENCE PARTICIPANTS

• Welcome	Richard A. Swanson, President-Elect, University of Minnesota
• Election Results	Gary N. McLean, Election Committee Chair, University of Minnesota
• Dinner	*(dinner included with conference registration)*
• Presidential Address	Karen E. Watkins, President. University of Georgia
• Academy Awards	Nancy Dixon, Awards Committee Chair, George Washington University

SUNDAY

Sunday 7:15 am AHRD Board Breakfast

Sunday 7:15 am **Breakfast Forum: The Changing Direction of the Profession**
(pull up a chair at the designated table in the restaurant)
Facilitators: Sharon Korth, Xavier University & Jack Phillips, Middle Tennessee State

Sunday 8:30-10:00 am -- KEYNOTE.... *HRD as a performance partner at the individual level:*

Irwin L. Goldstein, Professor & Dean of Behavioral Science, University of Maryland

"People and the Workplace: Policy Implications for Training Systems in the Year 2000"

Irv Goldstein's research career as an industrial-organizational psychologist has focused on issues facing individuals entering work organizations. He has particular interest in how individuals learn about organizations and resolving constraints that affect people who enter organizations. The 3rd edition of his well known book, Training in Organizations, was published in 1993. Irv also serves on the editorial board of the HRDQ.

Moderator for the Sunday Keynote session: Ronald L. Jacobs, Ohio State University

Sunday 10:15-11:45 am Symposiums

[23] CROSS-CULTURAL HRD Facilitator: David C. Bjorkquist, University of Minnesota

Developing Managers for Overseas Assignments in the Pacific Rim: A Study of International HRD Issues in Singapore
A. Ahad M. Osman-Gani, Nanyang Technological University (Singapore)
Thian-Ser Toh, Nanyang Technological University (Singapore)

Russia and China in Transition: Implications for HRD
John A. Niemi, Northern Illinois University
Kevin Owens, Northern Illinois University

Relationships Between Organizational Climate and HRD Practices: A Comparative Study of American and Chinese Firms in Taiwan
Hsin-yi Chen, University of Texas at Austin
Oscar G. Mink, University of Texas at Austin

Decoding Cultural Knowledge: Cross-Cultural Implications for Performance Analysis
Carol D. Hansen, Georgia State University
Elaine I. Metzger, Georgia State University

Embracing the Humanism of Africa in the Thought and Practice of HRD
Susan Lynham, University of Minnesota (South Africa)

[24] HIGH INVOLVEMENT WORK TEAMS Facilitator: Catherine M. Sleezer, Oklahoma State University

An Empirical Study of Employee Involvement in Designing and Managing Reward Systems
William M. Kahnweiler, Georgia State University

Involving Workers in the New Learning Environment Required for a High-Involvement Organization: The Worker's Perception
Joseph A. Ilacqua, Bryant College

Identification and Validation of Competencies of First-Line Supervisors in High Involvement Organizations
Paul O. Hardt, Employer's Association, Inc.

Validating a Check Sheet As A Guide For High Involvement Training
Paul E. Brauchle, Illinois State University
David W. Wright, Illinois State University

Characteristics of High Performance Work Teams: Perspectives from the Literature
Cathy Bolton, LeRoy Anderson, Amy Dodge, Jamie Tower, & Brenda Unruh, Oklahoma State U.

[25] ISSUES IN CASE STUDY RESEARCH IN HRD Facilitator: Lyle Yorks, Eastern Connecticut State

Defining and Selecting the Case
Bradley Cahoon, University of Georgia

Conducting Within-Case and Cross-Case Analyses
Laura Bierema, Washtenaw Community College

Validity and Reliability
Sharan Merriam, University of Georgia

Generalizing from an " N of 1"
Robert W. Rowden, Breneu University

Dealing With Ethical Concerns
Ann Brooks, University of Texas at Austin

Lunch & Hotel Checkout

Sunday 1:00-1:30 pm **CLOSING HRD TOWN FORUM** ....*Evaluation of the Conference*

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The Case for Learning[1]

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In this paper, we argue for a broader, more transformative definition of the field of human resource development. The concept of a learning organization is proposed as a unifying vision for the field. By embracing this vision, human resource developers have the opportunity to help the organization see the way in which learning is intrinsic and essential to the achievement of organizational strategic goals. Implications for creating a learning organization are discussed.

As we have conceptualized the field of human resource development, we have explored the need for a shift from a reliance on behaviorism to a broader, more transformative conception of learning (Marsick and Watkins, 1990a; Marsick and Watkins, 1990b in Galbraith), the need for a broader definition of the field of human resource development (Watkins, 1989 in Merriam and Cunningham), and differences and demands brought about by learning in the workplace which call for greater inclusion of informal and incidental learning strategies by human resource developers (Marsick and Watkins, 1990a). In this paper we revisit these ideas about the field of human resource development and then turn to a discussion of why we believe that the learning organization is an integrating vision for the field of human resource development. Our view of the learning organization and the consequent implications for the practice of human resource development will be presented.

Broadening the Conception of Human Resource Development

It is clear from all of our work that we aim to open the paradigm of practice in the field of human resource development. This aim is in direct conflict with that of Nadler (1983) who hopes to clarify the field by rigorously defining it and categorizing what it is and what it is not; or the American Society for Training and Development through the McLagan (1989) competency study which defines the field by identifying eleven human resource roles and then limiting human resource development to three of them, which then further delimits the field through lists of competencies and skills of practitioners. Although we agree that such efforts to define a field are healthy and needed in a new field, we also think that these approaches have been informed by a behavioristic view of practice and a reductionistic bias (Watkins and Willis, 1991). Practitioners may specialize in one or more areas of practice, but many if not most human resource developers, do not find that their work falls neatly into one or more of eleven roles. Indeed, more often than not, a senior practitioner may have had job experiences in all eleven. Skills under these conditions must be broad. We believe that what is more important is a practice-based definition which may also provide a vision for the field. A definition which captures

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[1] Excerpted from Watkins, K. and Marsick, V. (1993) "Building the learning organisation: A new role for human resource developers" Studies in Continuing Education, XIV (2) 115-129.

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such a vision for the field of human resource development is found in Watkins (1989, in Merriam and Cunningham):

> Human resource development is the field of study and practice responsible for the fostering of a long term, work-related learning capacity at the individual, group, and organizational levels. As such, it includes--but is not limited to--training, career development, and organizational development (p. 427).

This means that human resource developers are involved in facilitating or monitoring all types of learning in the workplace including formal, informal, and incidental learning. While the learner or client will vary from individuals to groups or departments to the entire organization, the professional mission of embedding an enhanced learning capacity or a learning-how-to-learn capacity will not. From the perspective afforded by this definition, the range of activities that human resource developers might engage in is vast.

This definition leads quite logically to the idea that human resource developers have a role as developers of the organization's learning system. A senior trainer for a multi-million dollar service industry described his role as "internal marketer." He said his role was to "sell" the organization's mission to the employees, to interpret and help to operationalize the chief operating officer's visions and dreams, and to embed the norms and values that characterize his organization's unique culture. He developed a video sharing the organizational saga - the critical turning points in its history, the vision of the founding fathers, and the current heroes who now carry the torch that was lit the day the organization was founded. He worked with top level staff to develop corporate vision and mission statements. And his primary training function was new employee orientation.

In many training departments, new employee orientation is often viewed as a distasteful task which is then relegated to new trainers. This trainer saw that new employee orientation was the pressure point for embedding the organizational culture. Done well, it could produce employees who know from the start what the organization stands for and how they can be a contributor to the mission. It can give them a sense of being part of something larger than themselves that is worthwhile, something worthy of their loyalty. It can also allow them to make an informed choice about whether or not this organization is one to which they want to make a long-term commitment. In this organization, new employee orientation became not just a means to share rules and procedures, but rather a means to enhance the long-term learning capacity of the organization by producing employees who know how to focus their learning and work on organizational needs and, potentially, by reducing turnover so that the wisdom accumulated by these employees stays in the organization allowing the organization to grow as they do. This is the kind of thinking about one's task which we think characterizes effective human resource developers and which is consistent with this definition of the field.

It seems to us that human resource developers have either moved in this direction or become logistics arrangers; scheduling conferences, handling outside consultants who can do these things, or managing resources like film libraries or packaged courses. Why would we expect that training would be immune to the paradigm shift attendant on a society as a whole moving into an information age? Human resource developers may find that they must either become expert at nonprogrammable learning strategies, or they will design or manage preprogrammed, technologically-delivered learning strategies.

In Watkins' definition, it is the outcome of one's efforts as a human resource developer that is stressed rather than the processes used to get there. Many means are possible, and in fact, desirable. This definition asks human resource developers to increase the overall learning capacity of the organization by enabling individuals to be more effective continuous learners, groups to identify and overcome barriers to collective learning, and organizations to create structures and a culture for continuous learning. In this instance, the role of the human resource developer is really more of enacting a vision. This will require continual reshaping and creativity. Results can be measured in terms of the enhanced learning effectiveness of individuals, groups, and organizations. It is precisely because our vision of human resource development is both broad and yet goal-focused that we see the learning organization as a natural evolution of the field. Human resource developers who are systematically and developmentally increasing the learning capacity of the organization *are* creating learning organizations.

From this perspective, theories of organizational change and development, the contributions of developmental stage theory and career development theory add to the knowledge base of the human resource developer. It is when human resource developers attempt to integrate learning strategies, particularly informal and continuous learning strategies, with a larger organizational change objective such as total quality management, that this merger of educational and organizational development roles becomes operational.

One reason this vision of the field is more vision than practice is that human resource development is seldom strategically positioned to influence the organization as a whole. Carnevale, Gainer, and Villet (1990) believe that training should already be at the corporate planning table but note that it seldom is. We agree and believe that a broader conceptualization of the field will enable human resource developers to take action to create this strategic alignment.

Toward the Learning Organization

In the field of human resource development, we have long sought to define who we are in order to clarify what it is that we do that is unique, so our concern with the definition and conception of the field is one we share with many. Ours is an applied field and therefore one that necessarily draws on many disciplines. Gradually, scholars are beginning to claim a niche that is distinctive. We think that the concept of a learning organization is one such niche for human resource developers as it brings together the two primary foci for this field: learning and the workplace context in which it occurs. Figure 1 illustrates the type of knowledge that we think human resource developers should seek in research and practice.

Figure 1 Conceptualizing HRD: The Nexus is the Learning Organization

WORKPLACE LEARNING

- *How do you create a learning culture in an organization?*
- *What is it about the organization that enhances or thwarts learning?*
- *How do we systemati-, cally develop an organization over time as a learning system?*

- *What is different about learning in the workplace?*
- *How is learning enhanced in the workplace?*
- *How do we systematically design learning for maximum personal career, & organizational learning & development?*

The learning organization is an evolutionary stage of thinking about workplace education in the United States. Early efforts to systematize training after World War II focused on simple procedures for developing behavioral skills for several reasons. Work procedures were standardized in an industrial economy, allowing for little deviation from desired routines. The workforce was not highly educated, so people could not easily be asked to use independent judgment or to perform complex operations. Training became skill-oriented and systematic to meet these needs. But the workplace has changed dramatically, while learning approaches have not kept pace. The information age demands judgment, autonomy, and complex thinking from the shop floor to the manager. While there is a large group of functional illiterate workers, the workforce on average is more highly educated and able to perform complex operations. The learning organization provides a home for new thinking about old educational needs, but it goes beyond that as well because it links individual learning with organizational learning. In many ways, organizational learning is a metaphor for understanding how systems change. Organizations do learn through individuals, but only when that learning is socially constructed, shared, and used to make a difference in larger social units or subdivisions of the organization, or more typically in the entire organization. In fact, learning organizations are characterized by total employee involvement in a process of collaboratively inititated, collaboratively conducted, collectively accountable change directed toward shared values or principles. Individuals work together to learn how to become a new entity.

Continuous learning strategies alone are not sufficient to create a learning organization. If people are learning continuously, the overall skill threshold of the organization improves, and a greater degree of slack is created in the learning system. As a result, the capability of the organization to respond to change and to act more skillfully (with total quality) improves. Yet, the organization as a whole is only doing "as before, but more." The organization must also be able to change itself fundamentally, which it can only do by changing the beliefs or mental models of its members. It is through ideology and structure that the organization is able to see new relationships and to change the framework through which the organization works. Ideology shapes the responses of the organization and structure constrains its responses. By changing the ideology and/or the structure, you transform the organization.

On the other hand, the current rate of change may be so great, that organizations are in a constant state of inconsistency. In this scenario, learning how to absorb impacts, how to stay afloat in a sea of changes, to choose changes to retain, and to become expert at a consistent overall strategy may be equally valuable skills. Learning when to change, when not to; how to stabilize the organization in turbulent times; and how to create a clear direction and aim toward it amidst a typhoon are as important as learning how to become a different organization in order to respond to different times. We conclude that organizations learn when they retain new skills or information, i.e. when they actually change. They increase their *capacity* to learn by making changes in the four systems which influence learning: strategy, structure, slack and ideology. All organizations learn. A learning organization is one which has an enhanced capacity to learn.

At the organizational level, the capacity of the organization to learn is enhanced through workplace literacy initiatives which change the threshold of skill in the organization. System-wide skills assessments and training strategically targeted to skill gaps are strategies which hold promise in enhancing the capacity of the organization to learn. Organizations which have a wide range of options for both recognizing and rewarding achievement, options for linking pay with individual and team needs and performance, as well as for funding learning, motivate continuous learning. Work redesign and experiments with self-directed or self-managed teams also may create the motivation to learn by making work challenging. Empowerment and employee involvement are also essential to change the structures which now prevent learning. Structures which encourage dependency lead to learned helplessness. Under these conditions, people do not try new things. As one person put it in a high technology organization with whom we have worked, "In this organization, there are nine people waiting to lop off the branch when you go out on a limb. That's why no one wants to sign up for this change effort."

At the organizational level, more collaborative structures enhance the organization's ability to learn. Boundary spanning in the form of building networks and collaborative endeavors rather than, as now, building one way communication, enhance learning. Slack is another key to whether an organization either has the capacity to learn or to change. An organization that has neither financial, technological, nor human reserves has no spare resources to learn or to try new things. . . .Lewin (in Argyris, 1952) wrote that learning is goal-directed behavior which requires "space of free movement." Education becomes a process of making space. Whether one is challenging existing prejudices, therefore making room for new beliefs; increasing an individual's ability to think abstractly or conceptually, thereby making space for theories and ideas which are broader, more able to "hold" and order large bodies of concrete, factual information; or teaching new skills, the net effect is that the individual has more room --"space of free movement"-- to act and to think.

At the organizational level, the ability to articulate and pursue a personal vision, functions to trigger learning. In total quality management, a cornerstone is "management by fact." Putting accurate data in the hands of everyone about current functioning along with a standard or benchmark of what is ideal (e.g. zero defects) creates a goal that can trigger learning. Space of free movement at the organizational level might be accomplished by learning to work collaboratively because it extends the organizations' capacity to achieve unified action on common goals/problems. Learning to think systemically may also ensure greater space of free movement because this allows more individuals in the organization to have an accurate picture of the interdependence of the parts of the organization, the people, and the actions taken. Finally, the approaches with the greatest potential to enhance the space of free movement in the organization are those which empower all members of the organization. Autonomy is having the power to act on one's own initiative. Rigid structures constrain autonomy and collaboration, but so does the tacit belief system of the organization when it is control-oriented and philosophically authoritarian. A more democratic workplace could achieve this balance of collaboration and autonomy.

In short, we think that the challenge and the excitement presented by the idea of the learning organization is that it calls on organizations to make good the promises of the past. Literature abounds calling for more open systems, for democratic workplaces, and for more participative, less authoritarian leadership. Despite numerous attempts to change organizations in these directions, the fundamental dynamic in the organization has changed little. A focus on learning necessarily challenges this. Learning occurs developmentally from the making of mistakes; to awkward hit and miss, trial and error achievement; to high performance. A zero defect culture where mistakes are high risk is highly unlikely to encourage learning. A climate of public humiliation and an atmosphere of criticism and punitive, subjective performance appraisal are also deadly for learning. Learning dies or is squelched in the little incidental moments when a quality team, for example, mentions a project tentatively and a top manager says that "it's already been done." Or, when a team suggests that one way to make managers more interpersonally sensitive is to "reward up" by letting employees nominate their managers for recognition awards, other management members of the team immediately say that this suggestion is outside of the scope of authority of the team. In each of these cases, learning is threatened.

Learning is opportunisitic. Those who develop the sense of when they are in a "teachable moment" and when others have "shut down," make effective teachers. Those who know what the learner needs to know next or what words the learner must hear to comprehend in order to move along the developmental continuum are effective teachers/coaches. What does this look like at the organizational level? Experiments in teaching managers to be facilitators, coaches, interpreters and guides hold promise. Strategies which empower, which enable bottom up movement and communication again make sense here since they create the possibility for everyone to become both teacher and learner. But most especially, what this looks like is a long term process of evolution. Strict, tightly controlled environments do not break free overnight. Figure 2 summarizes these strategies for building a learning organization.

Figure 2. Design Principles for Learning Organizations

Designers of learning organizations will need to:

- Focus on the essential elements:
  - Increase the overall learning threshold; Assess & enhance current capacity
  - Create an ongoing adaptive capacity: Embed systemic linkages between needs, work, & rewards
  - Build autonomy & empowerment, "space of free movement"

This means that human resource developers will be called on to--

- Break the training frame
- Embed continuous learning strategies (learning groups, reading and study groups, learning labs with self learning materials available, on-line learning resources, desk top learning, etc.)
- Teach people how to learn from experience, to think systemically, to bend and to break frames
- Conceptualize and plan individual development as long term, multi-career, and as preparatory for multiple organizational futures
- Monitor and upgrade the overall knowledge/skill set of the whole organization
- Help people enact more participative, democratic workplaces and more autonomous environments
- Lead the organization's development toward a learning organization (and be able to measure its progress)
- Craft policies which make learning continuous, self-regulated, and autonomously funded

Conclusion

The idea of the learning organization brings together the fields of training, career development and organizational development into a single vision of the role of the human resource developer. It offers human resource developers the chance to invite the organization to embrace the deeper, more long term learning programs which we have always known were needed to effect any change in behavior that will create the organizational results desired. We think, in other words, that this idea has captured human resource developers because it may create the kind of leverage in the organization they have needed in order to be effective. Human resource developers have the opportunity to enter the board room, to help the organization see the way in which learning is intrinsic and essential to the achievement of organizational goals.

What then, finally, is a learning organization? A learning organization is one that has embedded a continuous learning process and has an enhanced capacity to change or transform. This means that learning is a continuous, strategically-used process — integrated with, and running parallel to, work — that yields changes in perceptions, thinking, behaviors, attitudes, values, beliefs, mental models, systems, strategies, policies and procedures . Learning is sought by individuals and shared among employees at various levels, functions, or units. As a result, learning is embedded in an organization's memory of past wisdom, current repertoire of beliefs and actions, and future thinking processes.

Learning can either be incremental, that is, focused on refinements to current strategy, or transformational, that is focused on re-creating strategy because people understand the organization or its work in new, fundamentally different ways. Learning that is incremental allows the organization to be more resilient to changes or jolts while learning that is transformative leads to retention of new responses. The learning organization is an exciting concept for human resource developers because it has the potential to expand their role to include not only changing the threshold of skills in the organization, but also to become partners in the transformation of the entire organization.

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Human Resource Development: Performance Is The Key [1]

Richard A. Swanson
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This treatise argues that the HRD profession has been either been lax or indifferent as to its desired outcomes. Furthermore, it argues that HRD must focus on performance and performance improvement to qualify as a major business process and/or a value-added activity. Without a performance orientation, HRD is destined to the status of optional activity and/or a waste of resources.

The purpose of this position paper is to stimulate discussion by presenting a range of options for viewing human resource development (HRD). The major heading include (1) views of HRD, (2) definitions, (3) performance-- with or without instruction, (4) performance-- a closer look, and (5) conclusions.

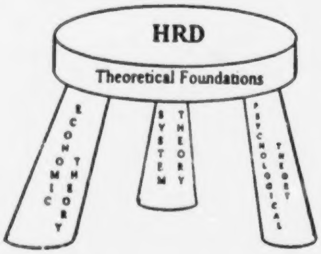
Views of Human Resource Development

First, I propose that scholars and professionals have the opportunity to view and position HRD at one of the following levels:

- *HRD as a major business process..........something an organization must do to succeed.*
- *HRD as a value-added activity..............something that is potentially worth doing.*
- *HRD as an optional activity................something that is nice to do.*
- *HRD as a waste of business resources....something that has costs exceeding the benefits.*

Furthermore, I believe that the specific view selected by the HRD leader is the one that will most likely become reality-- a self-fulfilling prophecy. And, in the absence of a commitment from HRD leaders, management and/or government will mostly likely impose a view that is based on misinformation or partial information.

Second, I propose that the theoretical foundations of HRD are drawn from psychological theory, system theory, and economic theory (Swanson, 1992). The visual image I use is a three-legged stool having the ability to stand secure on both smooth and irregular surfaces (Figure 1). Furthermore, I believe that all three are required ingredients for HRD to be considered a major business process.



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[1] In press - *Human Resource Development Quarterly*, Vol. 6, No. 2, 1995. This paper is based on the author's conference keynote address to the International Research Network for Training and Development on June 23, 1994 in Milan, Italy.

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Definitions

Human Resource Development (HRD). Human resource development is a process of developing and/or unleashing human expertise through organization development and personnel training and development for the purpose of improving performance.

Components of HRD. The two major components of HRD are (1) personnel training and development and (2) organization development. In addition, HRD has three critical application areas including: human resource management, career development, and quality improvement.

Organization Development. Organization development is the process of systematically implementing organizational change for the purpose of improving performance.

Training and Development. Personnel training and development is the process of systematically developing expertise in individuals for the purpose of improving performance.

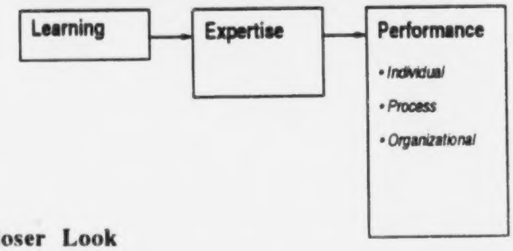
Performance. There are three levels of performance: organization, process, and individual.

HRD Values: HRD practices should be theoretically and ethically sound. HRD calls upon theories from multiple disciplines. Thus, the problem of connecting sound theory and sound practice within a theoretically sound and ethical framework is an important part of HRD theory and practice.

Performance-- With or Without Instruction

The historic root of the HRD profession is with the training-learning component (Swanson and Torraco, 1995). In order to understand the contemporary role of HRD, it is important to revisit the role of learning in the profession.

I love learning. I love the process of learning and the results of having new knowledge. More than learning, I love expertise. I love the personal sense of self that results from being efficient and effective. Learning is only one component of expertise. More than expertise, I love performance. Expertise is only one component of performance (Figure 2). Worthy performance from the perspective of business and industry can be viewed at the organization, process, and individual levels (Rummler & Brache, 1988; Swanson, 1994).


Relationship Between Learning, Expertise, and Performance

Performance-- A Closer Look

For HRD to become a core business process, performance is the key. The performance perspectives of levels, variables, measures, and facets help clarify the concept of performance.

Performance Levels and Variables. The three levels of performance-- organization, process, and individual-- remind us that organizations view and value performance in a hierarchy (Rummler & Brache, 1988) and that there are multiple variables influencing performance. The following matrix of enabling questions in Figure 3 helps diagnose performance issues (Swanson, 1994, p. 52). When taken seriously, the seemingly simple matrixed questions lead the analyst to the core disconnects from performance.

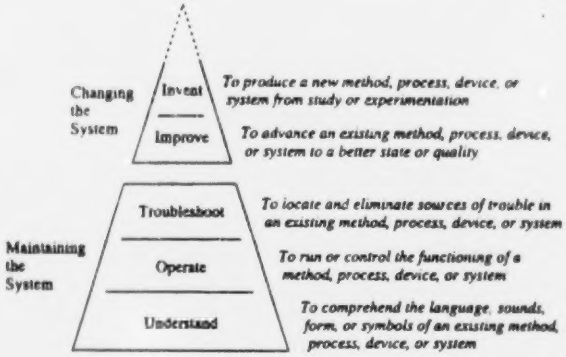
Performance Diagnosis Matrix of Enabling Questions

PERFORMANCE VARIABLES	PERFORMANCE LEVELS		
	Organizational Level	Process Level	Individual level
Mission/ Goal	Does the organizational mission/goal fit the reality of the economic, political, and cultural forces?	Do the process goals enable the organization to meet organizational and individual missions/goals?	Are the professional and personal mission/goals of individuals congruent with the organization's?
Systems Design	Does the organizational system provide structure and policies supporting the desired performance?	Are processes designed in such a way as to work as a system?	Does the individual face obstacles that impede job performance?
Capacity	Does the organization have the leadership, capital, and infrastructure to achieve its mission/goals?	Does the process have the capacity to perform (quantity, quality, and timeliness)?	Does the individual have the mental, physical, and emotional capacity to perform?
Motivation	Do the policies, culture, and reward systems support the desired performance?	Does the process provide the information and human factors required to maintain it?	Does the individual want to perform no matter what?
Expertise	Does the organization establish and maintain selection and training policies and resources?	Does the process of developing expertise meet the changing demands of changing processes?	Does the individual have the knowledge, skills, and experience to perform?

Measures of Performance. If HRD is aimed at specific performance requirements, and is an appropriate intervention, units of worthy performance will be identifiable. Critical measures of performance in business and industry are tied to the core goods and services of the organization and are generally measured in terms of (1) quantity, (2) time, and/or (3) quality features that can be easily converted into monetary worth (Hronec, 1993; Swanson & Gradous, 1988; Swanson, 1990). Core goods and services might include such things as microchips produced, computers assembled, windshields made, wiring harnesses produced, subscriptions, meals served, or clients. HRD viewed as an optional activity (something nice to do) or even a value added activity (something that is potentially worth doing) is almost never directly connected to core business outputs. Thus, attempting to evaluate workplace performance outcomes from these programs is generally futile.

Taxonomy of Performance. Performance requirements in today's workplace can often be separated into two levels. One level has is concerned about maintaining the existing system. The second level has to to with improving the system. Organizations experience a concurrent need for control and innovation and the "Taxonomy of Performance" (Swanson, 1994, p. 57) provides additional insight into performance requirements at these disparate levels and the role HRD can play in improving performance (Figure 4).

Taxonomy of Performance.


Changing the System
Invent
To produce a new method, process, device, or system from study or experimentation
Improve
To advance an existing method, process, device, or system to a better state or quality
Maintaining the System
Troubleshoot
To locate and eliminate sources of trouble in an existing method, process, device, or system
Operate
To run or control the functioning of a method, process, device, or system
Understand
To comprehend the language, sounds, form, or symbols of an existing method, process, device, or system

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HRD As A Major Business Process. The standard system model (input->process->output) helps illustrate the business organization as a system and HRD as a subsystem. Most organization charts with their hierarchies show the chain of command of the organization, not a mission and goal-driven system.

- *HRD as a major business process.........something an organization must do.*

The standard system model (input->process->output) model has external customer requirements on the input side and external customer satisfaction as the output. As a major business process, HRD's contribution is directly connected to the external customer and most likely serves internal customers and parallel processes to achieve core performance outputs of the organization.

- *HRD as a value added activity...............something that is potentially worth doing.*
- *HRD as an optional activity.................something that is nice to do.*

HRD that connects to the internal customer (not to the external customer) is not systemically positioned to be a major business process. Under this condition-- as a supporting sub-system-- HRD has the potential of being aligned with the strategic goals and thus, adding value to the organization. Without this alignment, however, HRD is viewed as an optional activity that is totally dependent on the integrity of the internal customer it serves.

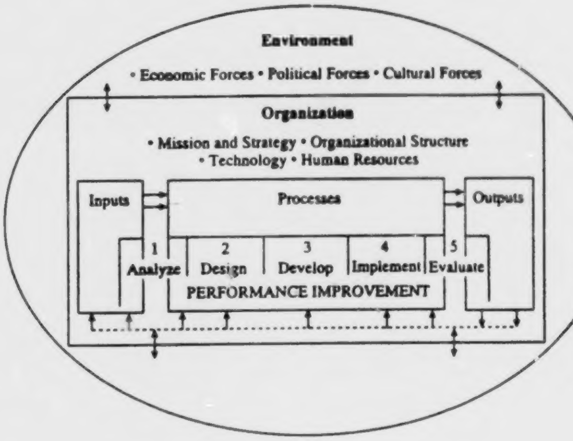
- *HRD as a waste of business resources....something that has costs exceeding the benefits.*

Finally, and tragically, HRD commissioned by an internal customer without systemic, psychological, and/or economic integrity can cause losses to an organization. While I know of no research as to the extent of losses caused by HRD, I believe that the negative impact of low quality HRD efforts are large.

Conclusion

In conclusion, I offer the following general model of HRD as a major performance improvement business process partner-- one that connects HRD to other major business processes that are influenced by and influence the total organization and the environment in which it functions (Swanson, 1994, p. 20). Furthermore, the model displays an orderly process in which HRD acknowledges performance as the key in the struggle to retain the integrity of the individual, process, and organization.

Systems Model of Performance Improvement.


Environment
• Economic Forces • Political Forces • Cultural Forces
Organization
• Mission and Strategy • Organizational Structure
• Technology • Human Resources
Inputs
Processes
Outputs
1 Analyze
2 Design
3 Develop
4 Implement
5 Evaluate
PERFORMANCE IMPROVEMENT

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High Performance Work Systems

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Rising competition in world and domestic markets during the past two decades has led increasing numbers of U. S. firms to undertake innovations in their work systems. By the mid 1990s, a new vision of what constitutes an effective work system seems to have emerged. The concept of high performance work system has increasingly been used to describe this vision and the innovations in the organization of work that have occurred in a number of different companies. A variety of approaches have been used to define high performance work. A key to all of them is the incresing recognition of the importance of human resources in performance and competitiveness. This paper assesses the state of theory and research on high performance work from a "systems" perspective, and it identifies challenges for future theory and research.

Dramatic changes have occurred in the financial and organizational structures of American business during the past decade. Takeovers and buyouts have transformed the control and ownership of many firms while organizational restructuring has transformed the work environment and product focus of many companies. These changes have been driven by demands for greater share holder value and by increasing competition in global and domestic markets. They have been facilitated by advances in information systems and the spread of quality programs (Capelli, 1994).

Changing ideas about the best way to organize corporations have also stimulated changes. The idea that successful firms have a distinct competency that differentiates them from competitors and drives their competitiveness (Prahalad & Hammel, 1990) has led companies to rid themselves of unnecessary functions and to outsource tasks that are not part of their core competencies.

In response to internal and external pressures, companies have reduced costs through downsizing and introduced new forms of work and principles of organizational design (Useem, 1994). The elusive goal has been higher performance, sustained over time. By the mid 1990s, a new vision of what constitutes an effective work system seems to have emerged. The concept of a high performance work system has increasingly been used to describe this vision and the innovations in the organization of work that have occurred in a number of companies.

High Performance Work: Practices, Strategies, Principles, or Systems?

Much of the discussion of high performance work has focused on discrete practices such as self-managing teams, quality circles, profit sharing, gainsharing, and training. In their review of experiments with workplace innovation, Appelbaum and Batt (1994) identified a set of strategies that lead to high performance: work reorganization, human resource strategies, management methods, and industrial relations strategies. Others (Bassi, Gould, Kulik, & Zornitsky, 1993; Lawler, 1992) have identified sets of principles dealing with employee involvement, participative management, open communication, rewards and recognition, continuous improvement, and skill and knowledge development that are common to diverse mixes of high performance work practices and strategies. There is considerable overlap among the practices, strategies, and principles identified by different authors, reflecting apparent consensus about the components that are thought to characterize high performance work systems in the contemporary period.

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The Importance of Human Resources in Performance and Competitiveness

A key to all of the approaches is the increasing recognition of the importance of human resources in performance and competitiveness. In the face of dramatically changing competitive environments, many of the traditional strategic levers cannot provide the same levels of sustained competitive advantage and average profitability as in the past. There is an increasing emphasis on how a firm does business, and a key element is the extent to which a firm's human resource strategy supports larger strategic objectives. Scholars have begun to argue that a firm's human resources can provide a unique source of competitive advantage that is difficult for its competitors to replicate (Capelli & Singh, 1992; Wright & McMahan, 1992). At issue, is whether or how, firms can capitalize on this potential source of unrealized profitability.

Theoretical Perspectives

A number of different theoretical perspectives suggest mechanisms that link human resource policies to performance. Human capital theory emphasizes the acquisition and development of employee skills; psychological theories emphasize employee motivation and commitment; industrial relations theories emphasize effective worker representation and voice. All three perspectives share the notion that practices and policies affect performance primarily through their effects on the contribution and quality of labor input. Each emphasizes the logic of a systems approach although the frameworks draw attention to different systems of policies.

In a recent review article, Bailey (1993) argues that innovative HR practices yield better economic performance when they elicit "discretionary" effort from employees and when that effort can be effectively channeled to affect economic outcomes. Bailey argues that HR management practices can affect discretionary effort through their influence over employee skills, employee motivation, and the organizational structures that enable employees to perform effectively.

The link between worker attitudes, the organization of work, and firm performance is discussed extensively in the literature on work teams. Cohen (1993) identified two main theoretical explanations for the effectiveness of work teams--job characteristics theory and sociotechnical theory. The theories are quite similar in their identification of the key attributes of the design of the work group's task that contribute to team effectiveness. The theories differ, however, in their explanations of how these attributes affect team performance. In job characteristics theory, the explanation is primarily psychological and motivational. In contrast, sociotechnical theory views team self-regulation as the primary mechanism through which the design of the work group's task influences outcomes. Motivational effects are acknowledged, but the theory emphasizes the ability of teams to allocate resources efficiently and to make on-line decisions and process improvement in the course of doing their work. Empirical studies of teams provide support for both explanations.

A Systems Perspective

Much of the theoretical work on the impact of human resource strategies on performance has emphasized the role of "fit" among HR strategies and between them and corporate strategies (Milgrom & Roberts, 1993). The presumption is that more effective systems of HR management practices, which simultaneously exploit the potential for complementarities or synergies among such practices and forge a link with the firm's competitive strategy, are sources of competitive advantage.

A system of interrelated, overlapping HR practices may lead to improved performance by providing several ways for workers to acquire skills (e.g., off-the-job and on-the-job training, job rotation, problem-solving groups) and multiple incentives to boost motivation. As Hackman (1985) writes, performance may be "an overdetermined phenomenon", the product of multiple non-independent factors whose influence depends in part on the fact that they are redundant.

Osterman (1987) argues that there should be an underlying logic to the firm's system of HR management practices, and that certain policies and practices fit together in an internally consistent framework. Brown and her colleagues (1993) illustrate this argument, articulating the nature of interdependence among employment security, employee involvement, and training.

Ichniowski, Shaw & Prennushi (1993) describe three sources of complementarity among HR policies described in the theoretical literature: cultural complementarities that arise from complementary practices needed to create an environment of positive peer pressure; trust-based complementarities that arise when a firm has a reputation for being trustworthy; and technical complementarities, that arise when one policy requires the adoption of another in order to work most effectively. The existence of such complementarities suggests that firms should not make marginal decisions with regard to the use of HR practices, and that they will profit most from making discrete jumps in the use of clusters of practices.

Researchers have developed many typologies for innovative HR practices (see summary in Bailey, 1993), categorized in terms of their impact on, for example, motivation or skill development or work structures. Given that any single practice may play a multifaceted role in the overall human resource system, there is no clear conceptual basis for separating practices affecting motivation from those affecting skill. For example, work teams represent a restructuring of work organization that integrates human resources more fully into the production system, but they also develop worker skills and influence motivation and commitment.

A number of researchers (MacDuffie, forthcoming; Osterman, 1994) have distinguished between practices that affect the organization of work and the way work tasks are carried out, and those that reflect firm-level human resource policies affecting employees at all levels. In the treatment of systems or "bundles" of practices, it is implicit that practices within bundles will be interrelated and internally consistent. Also implicit is the idea that "more is better" with respect to impact on performance.

Thus, the systems hypothesis is that combinations of HR practices will have bigger effects on performance than the sum of component effects due to individual policies. A growing literature suggests that firms attempt to match their HR management practices with their culture and business strategy (Osterman, 1987; Cutcher-Gershenfeld, 1991; Arthur, 1992; Snell & Dean, in press; Snell & Dean, 1992; Ichniowski, 1990). If complementarities are important, research that focuses on the impact of individual practices on performance may produce misleading results, with a single practice capturing the effect of the entire HR system.

Best Practice Versus Contingency Models

The "internal fit" perspective suggests that the adoption of an internally consistent system of high performance work practices will be reflected in better firm performance, other things being equal. This implies that it should be possible to identify a series of HR management "best practices," or a high performance workplace system, whose adoption generally leads to valued firm-level outcomes. According to the best practice view, the new demands on organizations are so pervasive that there exists a set of core HR management practices or high performance work practices that are common to most high performance work organizations, irrespective of their particular corporate strategy (Delaney et al., 1989; Ichniowski, 1990; Pfeffer, 1994).

The contingency, or "external fit" perspective questions whether any particular HR policy can ever be described as a "best practice" and suggests that the efficiency of any individual practice or system of such practices can only be determined within the context of a particular firm's strategic and environmental contingencies, especially those related to product and labor markets and the underlying production technology (Dunlop & Weil, 1995). According to this view, product market forces will determine a "modal" set of viable human resource practices, while firm-specific choices will result in variability around that mode. According to the contingency perspective, viewing human resource innovations separate from other practices necessary to adapt to new market conditions potentially overstates the impact of these innovations on competitive outcomes.

A growing body of research in several fields has compared practices across organizations

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in an attempt to identify practices or clusters of practices that produce better performance results. Much of the existing literature, however, examines the effectiveness of individual reforms in workplace systems, such as mechanisms for participation, compensation systems, and training, without sufficient consideration of the interrelations among the elements of an employment system or of the role of the external environment (Levine, in press).

During the past several years, studies have begun to assess links between systems of practices and performance outcomes. Some studies use the corporate holding company as the unit of analysis, enabling them to link to publicly available data and assess the relationships between systems of practices and firm performance. Other studies use establishment-level indicators of performance, with researchers examining the impact of organization-level practices on these outcomes controlling for other possible influences, such as technology in use.

This new research includes both studies across firms in different industries and industry-specific studies. The appeal of industry-specific studies is the implicit control of unmeasured variables that might bias the results. Variation in HR strategies within the same industry do not face the potential contamination by unmeasured industry differences that confront multi-industry samples.

Definitions and Measurement of Systems

A variety of definitions of systems has been used in studies that have tried to test the hypothesis that combinations of practices will have bigger effects. Several studies (Arthur, 1992; Osterman, 1994) use the construct of a "transformed" organization, but each defines and measures that construct differently. Arthur (1992) used employee involvement, decentralized decision-making, employee participation, and general training to classify steel "minimills." He measured these concepts quite broadly and derived six HR clusters, which he divided into two groups--one cost minimizing, the other commitment maximizing. Osterman (1994) focused on self-directed work teams, job rotation, problem solving groups and total quality management in a cross-industry establishment-level survey. He defined plants as transformed if they used at least two of these approaches to work organization, with 50% or more of employees involved in those practices.

Lawler and his colleagues (Lawler, Mohrman, & Ledford, 1992) defined a system or collection of employee practices that involve decision-making power, rewards for collective performance, information sharing, and training. A number of scholars have defined an emerging employment system characterized by three elements: a high degree of employment security based upon flexible job assignment; employee involvement in problem solving and continuous improvement; and continuous training of all employees. Huselid (in press) factor analyzed a set of popular human resource practices and followed Bailey's theoretical arguments in labeling the two factors: employee skills and organizational structures; and employee motivation. Ichniowski (1990) used a clustering algorithm to identify similar groupings of businesses with distinctive personnel policy groupings. MacDuffie (forthcoming) created three indices to operationalize the organizational logic of flexible and mass production systems in auto assembly plants--use of buffers, work system, and HR policies. He clustered the three bundles of practices to determine which plants were "lean" and which were not, or in transition.

High Performance Work Systems: What works? What doesn't?

Despite the disparate ways in which systems of practices have been defined and measured, there is a growing body of work that supports the view that transformed work systems function best when they are part of a coherent system of work reorganization, job design, and human resource and industrial relations practices.

Recent review articles provide empirical support for the systems view. Weitzman and Kruse (1990), in a meta-analysis of research on contingent compensation plans, find that the majority of studies show such plans have weak but positive effects on performance. The strongest effects occur when contingent pay is combined with some form of employee participation. Similarly, in a review of research on the effects of employee participation, Levine and Tyson (1990) find that the performance impact is greatest when participation is substantive, involving influence over how work is done, rather than consultative.

Several recent large-sample cross-industry surveys also find a positive association between bundles of innovative HR practices and various performance measures (Ichniowski, 1990; Mitchell, Lewin & Lawler, 1990; Huselid, in press; Lawler, Mohrman, & Ledford, 1992).

MacDuffie (forthcoming) investigated whether HR practices occur as interrelated, internally consistent "bundles" that are integrated with manufacturing policies under the "organizational logic" of the production system. Each of the indices (work systems, buffers, HR practices) had high internal consistency. Each was also correlated with the other two indices. Cluster analysis distinguished three groups of plants--mass production, transition, a and flexible production--which differed significantly in mean values for these indices and the practices bundled within them.

Ichniowski (1990) found that businesses with the highest levels of performance had "high commitment" HR systems with flexible job design, employee training, extensive communication systems, and merit-based reward structures. Businesses that employed many, but not all features of the "high commitment" HR system exhibited significantly lower levels of labor productivity and lower stock market values than the high commitment systems, suggesting that businesses need to adopt all of the policies in this system to enjoy its performance advantages.

Ichniowski, Shaw and Prennushi (1993) found evidence of a high degree of correlation among HR practices that reflect cultural, trust-based, and technical complementarities.

Effects on Performance

A number of studies have demonstrated links between a measure of HR systems and establishment-level measures of performance. The best of these (Arthur, 1994; Delaney, in press; Ichniowski, Shaw, & Prennushi, 1993; MacDuffie, forthcoming) provide persuasive evidence that innovative systems of HR management practices have significant effects on measures of performance, primarily in certain manufacturing industries.

Delaney (in press) found the widespread use of progressive HR management practices to have strong and negative effects on organizational turnover in the manufacturing sector. Ichniowski, Shaw, and Prennushi (1993), using longitudinal data from 30 steel plants, found a significant impact of "cooperative and innovative" HR management practices on organizational productivity. They also found that marginal changes in individual policies have little or no effect on productivity; improving productivity required substantial changes in a set of HR policies (p. 36). Arthur (in press) found in 30 steel "minimills" that firms with "commitment" HR systems (emphasizing the development of employee commitment to the firm) had lower turnover and scrap rates, and higher productivity than did firms with "control" HR systems (emphasizing efficiency and the reduction of labor costs).

MacDuffie and Krafcik (1992) found that use of buffers and HR policies contributed almost equally to the strong relationships between production organization and productivity. With quality as the outcome measure, however, the HR policies measure was the most influential component.

Finally, MacDuffie (forthcoming) found that internally consistent "bundles" that are integrated with manufacturing policies under the organizational logic of the production system contribute to assembly plant productivity and quality. Hypothesized two-way and three-way interaction effects among the buffers, work organization, and HR practices bundles emerged strongly. Overall, the evidence provides strong support for the hypothesis that assembly plants using flexible production systems, which bundle human resource practices into a system that is integrated with the production/business strategy, outperform plants using more traditional mass production systems in both productivity and quality. These results are perhaps the strongest evidence to date of a positive relationship between innovative human resource practices and economic performance, particularly given the comprehensive international sample, the presence of strong control variables, the high reliability of the context-specific measures of performance and HR practices and the discovery of statistically significant interaction effects in a small sample.

One pilot study conducted in the apparel industry has investigated the role of mediating mechanisms as well as the effects of human resource and industrial relations practices. Berg, Appelbaum, Bailey, and Kalleberg (1994, p. 37) concluded that the performance of module production practices and associated human resource practices was superior because of economies of self-regulation, which depend strongly on the gains from coordination. Neither job satisfaction nor organization commitment of workers, which were included as potential mediating mechanisms, was correlated with the modules.

Findings that systems of high performance work practices affect turnover or productivity do not necessarily mean that these practices have any effect on firm profits. Ichniowski (1990) reported results consistent with the proposition that progressive high commitment strategies emphasizing flexible job designs, training and communication have a positive influence on firm financial performance. Huselid (in press) surveyed more than 3400 firms that were domestically owned, publicly-held, employed more than 100 employees and were not a publicly held division of a larger company or a holding company. Responses indicating the breadth and depth of the use of thirteen HR policy characteristics were factor analyzed. The resulting factors were labeled following Bailey's theoretical analysis. Both dimensions were positively related to firm economic performance as measured by Tobin's Q, although the impact of the employee motivation dimension was more stable and economically significant. Despite the attractiveness of being able to match with publicly available data, there are several drawbacks of such firm level studies. Establishments within one company can exhibit radically different HR practices. Moreover, corporate level perceptions about such practices may be only loosely correlated with actual practices in the workplace.

Assessing the Best Practice Versus Contingency Arguments

The empirical literature has done little to distinguish between these two formulations. To date, there is little support for the contingency argument. One might conclude that the simple adoption of systems of high performance work practices is more important than efforts to ensure that these policies are aligned with firm competitive strategy. However, the theoretical arguments for external fit remain compelling, and more research is required before reaching the conclusion that it does not matter.

Extent of adoption

A low level of diffusion of high performance work practices is evident in most studies of adoption. Firms engaged in international competition are more likely to adopt such practices as are firms that emphasize product quality and variety. Several studies note that there are high up front costs associated with transforming plants (Berg et al., 1994; Ichniowski, Shaw, & Prennushi, 1993). Ichniowski and his colleagues found that the differences between changers and nonchangers were: the credible threat of plant closure; differences in opinions regarding whether innovative practices will really work; and the cost of regaining lost trust. As a result, greenfield sites are more likely to adopt innovative practices. MacDuffie and Krafcik (1992) note that the switch from mass production [illegible] lean production is far from simple. Because the bundle of practices and policies that make up lean production are so closely interrelated, transitional states, in which some aspects of both systems are in place, are treacherous.

Caveats and Challenges for Future Research

Sources of Bias Cross sectional research does not permit us to draw conclusions about the direction of causality. Successful firms may engage in high performance work practices as a form of consumption rather than as a strategy to improve performance. Osterman (1994) provides evidence that organizational slack and employee-oriented values are associated with high performance work systems. To sort out the causality issue requires a panel design. To date, there is no research in which practices are introduced and effects are assessed later. Huselid (in press) did include adjustments for endogeneity. Most of the corrections produced estimates of the impact of high performance work practices which were larger than the original estimates. But, he, like others, expressed reservations about these estimates.

Because survey respondents self-select into samples, the probability of responding to a questionnaire may be related to the presence of high performance work practices. The most serious form of selection bias would occur if the probability of responding to a questionnaire is related both to a firm's financial performance and to the presence of high performance work practices.

Even more intractable than endogeneity or selection bias is the possibility that characteristics of the firm which may be associated with both the presence of high performance work practices and firm performance are not observed by the researchers (Huselid & Becker, 1995, p. 4). For example, firms with more sophisticated human resource practices may also have adopted more sophisticated strategies in marketing, finance, production, etc. Just as focusing on one or two HR management practices may overstate their effect if high performance HR management practices tend to cluster together, so too might a single focus on HR strategies overstate their effect by ignoring the presence of important policies in other phases of the firm's operation.

Varying Definitions of Practices and Systems The choices of which HR practices to measure, the measures used, the analytical tools and the resulting constructs vary dramatically (Hunter & Pil, 1995). Definitions of high performance practices are unclear. Not only are there problems with common meaning of questions and practices, but no two researchers use the same meaning of high performance work systems. A clearer definition of concepts and domains is crucial for cumulative knowledge to develop. High performance work systems is a term that has arisen out of popular usage, not precise theoretical construction.

Practices and elements measured include teams, training, job design, and compensation. Measurement varies from study to study and survey to survey (Hunter & Pil, 1995). Behavioral content questions should be used that enable researchers to make equivalence judgments (Kelley & Emison, 1995). Instead of asking if an establishment has teams, surveys or interviewers need to describe the actual practice. We need to know if there is some underlying behavior or practice that we can actually observe that is common across organizations.

Dimensions of Performance Existing studies use a number of different measures of performance. Productivity measures that are most often used to assess firm performance are inadequate (Sink & Smith, 1992). Defined as a ratio of outputs to inputs, these traditional cost-based measures of performance are less and less appropriate as the global economy moves toward more time-based competition, market dynamics increases, and work activities become organized around cross-functional flows of materials and products. There has been a growing interest in alternative measures of performance that take account of quality, reliability, short cycle ties, flexibility, innovation, customer service and social responsibility (Dixon, Nanni, & Vollmann, 1990; Sink, 1993). Improvement in some measures of performance may be achieved at the expense of others. A clear distinction between dimensions of performance is needed in future research. Such distinctions may enable us to integrate industry specific studies by identifying patterns of results in focused, clearly conceptualized categories, such as productivity, quality, cycle time, customer service and the like (Hunter & Pil, 1995).

Intervening Mechanisms A limitation of the studies just summarized is that most focus only on formal structures and practices. Such structures and practices are important only insofar as they shape the day-to-day behavior of people in the workplace, and the meanings associated with that behavior. Greater attention is needed to assessing a variety of processes at the individual, team, and organizational levels that may intervene between practices and structures and improvements in performance. Such processes include employee motivation and commitment, communication and information sharing, and organizational learning.

The key to better definitions of high performance work systems is the development of stronger theory connecting practices and outcomes. It is very important to measure the intervening behavior and attitudinal processes that are thought to result in higher performance. While case studies can help to illuminate the very different ways in which high performance workplaces operate, multi-level research designs are needed to systematically analyze practices, intervening processes, and outcomes across establishments. In such studies, the establishment is the unit of analysis that makes the most sense. A multi-level research design that surveys workers, not just HR managers, would allow us to determine how practices are being implemented and how they work (see Berg et al., 1994).

Conclusions

We lack clarity about what a high performance work system is. However, it is clear that human resource practices do matter for competitive performance. Systems of practices can have big effects on competitive performance outcomes. There is no magic bullet; systemic changes are needed. Work teams are one small part of the picture.

Because the use of clusters of practices is likely to improve performance, new businesses are especially likely to use them. Older companies are not as likely to make changes. The failure of piecemeal changes discourages more systematic changes. Moreover, the practices require high levels of trust among workers, mangers, and union officials.

A key issue that is often skirted in debates about high performance workplaces is the tradeoffs between firm performance and the well-being of workers. The changes that have occurred in American businesses have increased participation and upskilling. But there is also a dark side. A lot of dislocation has occurred. The definitions and meaning of high performance work are different for business and worker communities. More explicit attention to these value differences and trade-offs is needed if mutual gains are to be achieved.

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The New Paradigm of Human Resource Development: A Holistic Model

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Human Resource Development has been undergoing a paradigm shift that mirrors the shift occuring in business and industry. The most significant characteristic of this shift is the move from competition to cooperation. The literature that supports this assertion is reviewed, and a new model for the practice of HRD is presented.

Ever since Thomas Kuhn introduced his notion of the "scientific paradigm" in 1962 in his now famous book The Structure of Scientific Revolutions, the term, paradigm, has been used and popularized to the point where, as commonly occurs with new terms and concepts, it has found its way into everyday American parlance. Particularly in the past decade, almost every sphere of human life has been in the process of examining its own paradigm, looking at the beliefs and assumptions that underlie it and direct our activities. The sphere of Human Resource Development (HRD) is no exception.

This complex process of examining beliefs and assumptions is not an easy task. Difficulty notwithstanding, the purpose of this paper is twofold: first, to examine the current HRD paradigm by looking at the assumptions that underlie it, and second, to suggest a new paradigm for the practice of HRD. However, launching into a discussion about assumptions and paradigms is risky business. The risk stems primarily from the language barrier experienced while standing in one paradigm and looking into another. In addition to reducing the risk by defining key terms, I intend to carry out the purpose of this paper by examining the existing paradigm in which HRD is practiced. I will also briefly discuss the scientific impetus behind major paradigm shifts. I will then present evidence that there are shifting assumptions already occurring in the field of HRD. Finally, I will present a set of "new" assumptions which could create a new paradigm: a holistic model of HRD. Whether old paradigm or new, my premise is this: knowing the assumptions underlying a model is necessary to doing good work in Human Resource Development.

Rationale

The complex field of Human Resource Development is a dynamic and evolving one. It, too, is in the process of self-examination, as evidenced by recent best-sellers that present new and challenging approaches to improving organizational effectiveness. The experts, in presenting the latest ideas, set forth rules, guidelines, and models as being the answers to organizational problems and

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concerns.

Knowing the assumptions underlying any model is necessary primarily because the knowledge creates congruence, alignment, and consistency of the activity that occurs within the model. These characteristics of the model give it its "attraction" property. That is, a magnet attracts only because the structures within it are in perfect alignment with each other.

As stated earlier, operational definitions of key terms will facilitate understanding. The key terms in this discussion are paradigm, assumption, holism, and Human Resource Development.

Operational Definitions

Paradigm. Thomas Kuhn (1962) asserted that paradigms are "universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners" (p. viii). Although Kuhn is the person most responsible for bringing the term to our awareness, he himself used it in no less than 21 different ways (Guba, 1990). Casti (1989) explains that Kuhn's original notion of a scientific paradigm referred to the presuppositions and assumptions that pervade every aspect of human activity.

In current organizational theory, the word paradigm refers to those underlying principles which drive the everyday activity of any organization (Fletcher, 1990). A paradigm shift, then, is a different way of looking at things; a movement from one set of assumptions to another. In the context of organizational change, it could mean, for example, acquiring new cultural values, practices, technologies, and standards within an organization.

A paradigm could be thought of as an invisible framework that becomes visible only under certain circumstances, as in the ability to observe infrared rays when wearing special glasses. For the purposes of this paper, I will define paradigm as the framework or worldview that is made up of diverse sets of assumptions responsible for driving all activity occurring within that framework.

Assumption. An assumption, according to Webster (1982), is anything taken for granted, a presumption. Assumptions are thought to act on our behavior in unconscious ways. That is, our behavior is driven by that which we believe to be true, but those beliefs--assumptions--are not in our conscious awareness as we make choices about what we do, think, and feel. A set, or several sets, of related assumptions, then, comprise a paradigm.

It will be frequently noted here that there is strong evidence to support the unconscious property of assumptions. This evidence is in the form of negative evidence. That is, there isn't any. It was extremely difficult to locate in the literature any discussion or articulation of a given discipline's assumptions. Only at the epistemological level does there seem to be any acknowledgement that assumptions are critical to whatever theories or activities might rest on them.

Holism. Holism and systems theory are closely related concepts in that they each state in similar words that any whole is much greater than the sum of its component parts, and that each variable in the whole or system interacts in such a way that cause and effect cannot be separated (Ferguson, 1980). Webster states that holism is "the view that an integrated whole has a reality independent of and greater than the sum of its parts" (1982, p. 668). Ferguson reports that most scientists involved in the general inquiry of the new science agree that a holistic view not only raises serious questions about the traditional scientific method, but also makes clear that "wholes cannot be understood by analysis" (p.156).

This, of course, presents a problem. In order to create any holistic model one must, by necessity, examine and analyze the component parts of the model. And so, for the purposes of this paper, it is my intention to fly in the face of the very definition of holism and proceed not only to examine component parts but also to suggest a model that rests in a new HRD paradigm.

Human Resource Development. In the American Society for Training and Development "ASTD Models of Excellence Study" (1988), HRD is defined as "the integrated use of a) training and development, b) organization development, and c) career development to improve individual, group and organizational effectiveness" (p. 27). ASTD goes on to say that the primary focus of HRD is development. On a simple level, states Patricia McLagan (1989), HRD is "the process of increasing the capacity of the human resource through development" (p. 52). Organizations, she states, need to be more attentive to human resource issues in the changing, competitive market.

Marquardt and Engel (1993) define HRD as "the art and science of empowering people and organizations to create maximum productivity, quality, opportunity, and fulfillment as they work to achieve common goals" (p. xii). They state that HRD "can include anything from a single training activity to entire systems for achieving strategic goals within an organization" (p. 8). They point out that HRD is a dynamic field drawing upon several disciplines: education, management science, psychology, communication, economics, organization behavior, philosophy, and sociology. The multi-disciplinary basis alone demonstrates the complexity of assumptions that drive the practice of HRD.

Gilley and Eggland (1989) address the serious nature of global competition as the impetus behind management's increased emphasis on human performance. They define HRD as "organized learning activities arranged within an organization in order to improve performance and/or personal growth for the purpose of improving the job, the individual, and/or the organization" (p. 5). They also state that the purpose of HRD is to "bring about the changes that cause the performance improvements that will ultimately enhance the organization" (p. 13).

While these definitions are not exhaustive, they guide the following discussion. A full examination of the current paradigm in which Human Resource Development operates would be, of course, nothing less than an in-depth review of a rather large body of literature. I do not intend to do that here. I will, however, present a few of the most basic assumptions underlying the practice of HRD. These assumptions are often stated in terms of definitions, as discussed earlier, or in terms of philosophy, principles, purposes, and mission of the field.

The Current Human Resource Development Paradigm

The process of examining the assumptions of the current HRD paradigm is an investigation into several sources. First, the body of scholarly literature reflects a sizeable effort to look for and find answers to human resource questions and problems. Second, the amount of popular literature in HRD and related fields in growing exponentially each year. For example, the writings of Senge, Covey, and Hammer have dominated recent best-seller lists for months.

However, the literature on HRD does not explicitly state the assumptions, as such, that underlie the field. The implicit assumptions have been difficult to articulate, and it should be noted that the reporting of implicit assumptions determined herein could reflect a number of biases, even though attempts have been made to keep those biases to a minimum.

The three theoretical bodies that support HRD are systems theory, psychology, and economics (Swanson, 1981), and each of these disciplines brings with it its own set of assumptions. For example, general systems theory states that a system is "a collection of interdependent, organized parts that work together in an environment to achieve the purpose of the whole" (McLagan, 1989, p. 66). McLagan states that as a response to growing complexity in the world, systems theory provides the HRD profession with tools for determining hierarchies of systems, descriptions of systems components, and descriptions of systems processes.

The key concepts in systems theory are "parts, whole, environment, purpose, interdependent, and organized" (McLagan, 1989, p. 66). One assumption is that the parts and the whole must work together for a purpose. McLagan states that purpose, being agreed to and chosen by individuals in social systems, is a key process in organizations. Interdependence assumes that "the behavior of parts of the system affect other parts and the system as a whole" (p. 67). The concept, "organized," implies that parts of a system are not the product of random acts.

The combined concepts of "purpose" and "organized" appear to assume that individuals consciously and intentionally act "at cause" (as opposed to "at the effect of"). In other words, it is assumed that individuals possess the free will to make conscious choices about their behavior.

The discipline and practice of psychology is also concerned with human behavior, and influences the paradigm of HRD practice in many ways. With roots in a diverse array of other disciplines--philosophy and the natural sciences, for example--present day psychology is broad in its scope. Breadth aside, the goal of all research in psychology is to explain human behavior by focusing on the individual (Carlson, 1984). Psychology views individuals in terms of biology and development, mental system, behavior, the influence of society and the environment, and the range of possible experience.

Perhaps the most significant assumptions that can be gleaned from psychology come from its research methodology. The scientific method predominates over other methods of inquiry, and its assumptions are numerous and distinct (Smith & Glass, 1987). Primarily, the scientific method assumes that reality is an objective entity "out there" somewhere waiting to be discovered. The role of the researcher is objective and does not affect that which is being studied. The goal of research, to predict behavior, is accomplished by testing hypotheses with outcomes expressed statistically. Almost the entire discipline of psychology rests on these assumptions.

Economic theory also contributes significant assumptions to the current HRD paradigm. It is a social science concerned with "the way society employs its limited resources...to produce goods and services for present and future consumption" (Spencer, 1990, p. 2). It assumes that human behavior can be explained, in part, by the interactions of buying, selling, producing, and consuming. It also assumes scarcity; that is, material and human resources are limited in the sense that people want more goods and services than can be produced.

The concept of scarcity as it relates to economic theory is rich in assumptions. As economists illustrate, time is a scarce commodity. This is assuming, of course, the Western paradigm of time in which time is an external force to be reckoned with, as opposed to the creation view of time. For example, if a group of people are sitting around watching the clouds, we might say here in the West that they are wasting time; but in the plains of Africa, it might be said that they are creating time (Ember & Ember, 1977).

These three bodies of theory might very well be the most basic layer of assumptions under the practice of HRD. They, in turn, form the base for a second layer of assumptions found in the core concepts of the field.

In examining the definitions presented in the previous section, there are several common threads throughout. It seems to be agreed upon that HRD is a specific practice, distinct from other professional practice by its theoretical base and boundary of application. It is an integrated process of improving human capacity for performance. Its focus is on development, and its approach is multidisciplinary. The practice is carried out by trained and educated individuals who possess a body of knowledge enabling them to teach, train, facilitate, or otherwise produce changes in others.

Inherent in these concepts are several assumptions: 1) human beings have the capacity to learn and grow; 2) human beings working in organizations want and need to learn; 3) organizations want and need to develop their members; 4) organized learning activities are the primary tools in the application of HRD; 5) change occurs incrementally through deliberate action-based activities; 6) the impetus for change lies external to the individual and the organization; 7) certain individuals (HRD professionals) are best suited to stimulate and produce change in others; and 8) the HRD profession is committed to finding answers to organizational problems.

Also present in every definition of HRD is perhaps one of the most basic of assumptions underlying organizations, particularly those in the Western world and the global market: the notion of competition. The American economy is based on the principle that we may freely compete with one another for profit. The paradigm of competition, needless to say, is the common denominator of American life, as manifested not only in commerce but also in academia, sports, interpersonal relationships, and every other facet of our social lives.

Scientific Impetus for Paradigm Shifts

History demonstrates the way in which human construction of social institutions takes its lead from scientific explanations of reality. Whether or not it is intentional, we have constructed our worldview or paradigm from the natural sciences (Bohm, 1980, Capra, 1975; Wheatley, 1992).

In the past two centuries, the Newtonian scientific paradigm has dictated, among other things, organization behavior. In 1980, physicist David Bohm explained that Newtonian mechanistic science viewed the world as being constituted on separate and unchangeable "building blocks" (p. 173). In Wheatley's Leadership and the New Science (1992), she writes that "We manage [our organizations] by separating things into parts, we believe that influence occurs as direct result of force exerted from one person to another, we engage in complex planning for a world that we keep expecting to be predictable, and we search continually for better methods of objectively perceiving the world" (p. 6). These assumptions, from Newtonian mechanistic science, are from the 17th century.

Science today, however, has changed. In the past few decades, revolutionary discoveries in biology, chemistry, and physics are challenging our fundamental worldview or paradigm. Quantum physics, chaos theory, and the theory of self-organizing (dissipative) structures comprise the core of twentieth century science (Ferguson, 1980; Prigogine, 1984; Wheatley, 1992). While painfully complex and beyond my rational threshold of understanding, it can be stated that the essence of the new science sees the universe as being an undivided whole. Bohm (1980) stated that "to begin with undivided wholeness means, however, that we must drop the mechanistic order" (p. 176). As Wheatley (1992) cautions, we need to "ground our work in the science of the times" (p. 6).

Exactly what does this new science tell us about ourselves? If we were to extract a single major breakthrough from new science it would be the notion of wholeness and connectedness of all things in the universe (Bohm, 1980; Capra, 1975; Ferguson, 1980; Wheatley, 1992). This new science paradigm reflects a reality beyond the world of ordinary sense-perception which involves spaces of higher dimensions and transcends ordinary language and logical reasoning (Capra, 1975).

Ferguson (1980) states that to fully realize the extent to which new science transcends ordinary logic, one need only visit "the never-never land of quantum physics or the parapsychology laboratories" (p. 170). To consider psychic phenomena in 1993 is still viewed as unreasonable, even with the concrete evidence staring us in the face. It is the perfect example of the difficulty experienced while standing in one paradigm trying to understand another. To illustrate this shift, the everyday statement "I'll believe it when I see it" has moved to "I'll see it when I believe it."

As discussed in the following section, there is growing evidence that the new paradigm in science is creeping into other arenas of human activity and exerting its influence. In fact, there is ample evidence that a paradigm shift has already begun in many areas of social life. The implications for the practice of human resource development lie in the fundamental assumptions about human interactions that make up this new paradigm.

Moving Closer to a Paradigm Shift

In 1980, Marilyn Ferguson's highly popular Aquarian Conspiracy chronicled the growth and development of a wide network of individuals and organizations whose intention was to bring about radical change in the American culture. The conspirators, she wrote, were creating a new mind, a new paradigm, that would affect every facet of our lives. The assumptions underlying this movement represented a significant shift from the well-worn paradigm of tradition to belief-challenging ways of constructing human behavior. And some of the central assumptions of this new transformative process are rooted in holism and systems theory.

As discussed earlier, one of the central assumptions of this new paradigm is the interconnectedness of the universe and, as such, the various parts of the system must work in concert with each other for the good of the whole. However, our present model of competition does not fit within this new paradigm.

There are, in fact, individuals in various spheres who are challenging the assumption of competition; and in the past decade, their numbers are on the rise. Alfie Kohn (1986) makes a strong case against competition in No Contest when he refutes the arguments that competition is inevitable, more productive, more enjoyable, and builds character. He argues that "a competitive economic system offers itself as the best way to deal with scarcity while quietly promoting scarcity" (p. 74). He more than strongly suggests that competition contributes to an inequitable distribution of resources.

Further evidence of this paradigm shift occurring in the world of business and industry is from Peter Block, who in Stewardship (1993), states that "unless there is also a shift in governance, namely, how we distribute power, and privilege, and the control of money, the [organizational change] efforts will be more cosmetic than enduring" (p. xix). He is demanding a quantum change in our worldview regarding power, privilege, and money--no small dimensions in how we structure our lives.

The central premise of Block's notion of Stewardship centers on the concept of service. It is "accountability without control or compliance" (p. xx). The true meaning of service, in my view, in a foreign concept in societies structured around a patriarchal, competitive economy. In such an economy, self-interest is the primary motivator. Service, on the other hand, springs from quite different assumptions. The values inherent in service favor sharing over greed, autonomy over hierarchy, cooperation over competition,

and collectivism over individualism (Ferguson, 1980). Another guru of present day organizational transformation states that "if economists understood the theory of a system, and the role of cooperation in optimization, they would no longer teach and preach salvation through adversarial competition" (Deming, 1993, p. 75). He advocates throwing out the idea that competition is a necessary way of life, and recommends replacing it with cooperation.
George Land and Beth Jarman (1992) use examples from science, nature, and business to illustrate the ways in which millions of people are contributing to major change in Breakpoint and Beyond. They refer to the human breakpoint as that which "requires us to change our basic thinking patterns and alter our worldview" (p. 9). They define worldview as shared assumptions about how the world works. They make an argument for dramatic shifts in the way business operates, using the creative process as a primary tool.

In The Fourth Wave (1993), Maynard and Mehrtens identify a wave for business in the 21st century that appears to be inevitable. They identify several trends that contribute to a paradigm shift in business and industry. Like Block, they contend that a major shift in consciousness is upon us. They state that "increasing numbers of people around the world are concluding that consciousness is primary, that the mind or spirit has a reality comparable to material objects" (p. 2). They, too, place emphasis on interconnectedness and wholeness, and suggest that the role for business is global stewardship.

The waves of change, a concept from Alvin Toffler, refer to the major revolutions profoundly affecting human life. Toffler's third wave referred to balance and sustainability, connectedness and cooperation. Maynard and Mehrtens predict that the worldview of the fourth wave is "We are one and choose to cocreate" (p.6). They observe that most corporations today are second wave--"we are separate and must compete"--as evidenced by hierarchical structures and values like profit, efficiency, and growth. They are clear that the competitive model of organizations is going to be replaced by a cooperative model with congruent values.

In addition to the challenge to competition, there are other indications that a paradigm shift is underway. Joining Block, Senge, Maynard and Mehrtens, and Covey in presenting new ideas about organizational transformation are Warren Bennis, George Land, Willis Harman, Michael Ray, Marjorie Kelly and others who have made significant contributions to a new paradigm in business (Ray & Rinzler, 1993).

As members of the World Business Academy, these individuals believe that of all social institutions, "only business has the power to facilitate solutions" (p. xi) to the overwhelming challenges facing the world today. They believe that the "business of business is to be responsible for the whole of creation, for the well-being of the earth and all its creatures" (p.xiii). This does not sound like the voice of business, particularly when standing in the traditional business paradigm.

However foreign sounding these new concepts may be, the shift, like change, is inevitable. The bad news about change is that it takes time--lots of time. After all, it took about a century for Copernicus's ideas to have an effect. He was the fellow who created a major paradigm shift when he postulated that the earth was not the center of the known universe.

The good news is that it appears there is a paradigm shift underway. There are several assumptions to this new paradigm that have already been articulated by others. And these assumptions most certainly can apply to the practice of human resource development. To contribute to this evolving paradigm, I would like to propose some assumptions of my own.

Alternative Assumptions for a Holistic HRD Model

It is evident that the traditional, world of agreement paradigm of the practice of human resource development has thus far included a commitment to finding answers to organizational problems. The assumption here is that there is an answer to every problem and the task or function of HRD is to find the right one.

In a new evolving paradigm of HRD I would like to propose a shift from answers to questions as a problem solving model. The commitment, focus, emphasis and priority would be placed on the asking of the questions, the right questions, and not on finding the answers. "Answers" would occur, of course, but they would be viewed more as transient and temporary rather than final and lasting. While the distinction may at first be seen as semantic, the shift would become manifest in the degree to which we become attached to what we perceive as being "right."

A commitment to asking the right questions would also facilitate the creative process. The power of a question partially lies in the lifting of limits inherent in answers. That is, when we find the answer to a problem, we stop any activity related to it. The right/wrong nature of answers often inhibits further inquiry. By remaining focused on the questions surrounding a problem, we are willing to seek and find any number of answers as solutions. For example, it might be more powerful for an organization to create not a mission statement, but a mission question.

In this example, the emphasis on the question is more process oriented, as opposed to the destination orientation of answers. An organization is more likely to experience greater creativity by remaining committed to a mission question that if it were locked in to a final-form statement.

A second suggested assumption in the new HRD paradigm concerns cooperation as mode of human interaction. By exchanging the competitive model of commerce for a cooperative one, we would be keeping in alignment with the newly emerged scientific paradigm. This shift will eventually occur, so we might as well implement it now.

Individuals and organizations are at the cause of their experience is a third assumption for the new HRD paradigm. This means that human beings create their own experience, as opposed to being at the mercy of their environment. This assumption requires a bit of a leap. It basically views individuals as accountable, not as victims.

A fourth assumption refers to the responsibility for the growth and development of individuals within organizations. It is part of the current HRD paradigm that development of individuals is critical to the overall success of an organization. However, the emphasis is on how, by developing the individual, the organization will benefit. The suggested assumption in the new paradigm shifts the benefit from the organization alone to both the organization and the individual. A related assumption is that by both benefitting, the net gain is greater than the sum of separate gains.

A final assumption of the new HRD paradigm concerns the view of success. In its most global form, the assumption is: success is reached when the world works for everyone and everything with nothing and no one left out. In related assumptions, we assume that no one wins unless everyone wins. All human activity would have at its focus the success of everyone.

Conclusion

Patricia McLagan states that the workplace is "a context for managing and developing people that will require new assumptions, styles, and skills from everyone who does HRD work" (1989, p. 49). I agree with her. I wonder, though, if she had anything quite so radical in mind when she said this.

In this paper I have attempted to describe the current paradigm of HRD practice as well as document a shift that is already underway. In addition, I have proposed some assumptions of my own to add to the new paradigm, the "question" assumption being original.

As I discussed earlier, the difficulty in considering and discussing paradigm shifts lies in our language, both verbal and mental. Because we are thinking, feeling, and speaking from one paradigm, addressing the assumptions, concerns, and issues of a different paradigm often makes no sense at all. If, by chance, we happen to grasp the concepts of the new and different paradigm, we still have difficulty transposing the implications of it into our current lives. Perhaps critical mass will occur in my lifetime and I will be here to see it!

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Designing Action Reflection Learning Research: Balancing Research Needs Against Real-World Constraints

ARL™ Inquiry[1]

Boundary management is a challenge in all forms of participant observation. Here we explore considerations that we believe are unique to research on Action Reflection Learning™ programs in which the role of the researcher bears similarity to a key purpose of the program itself, that is, reflection from an outsider's perspective. We describe the program researched and the research design, as both intended and actually implemented. We then look at boundary management issues and their implications.

This paper shares reflections upon an evolving research design through which we seek to understand the dynamics and outcomes of Action Reflection Learning™ (ARL) programs. ARL is an executive development intervention that is linked to organizational change outcomes. It is designed around learning theory that features an iterative process of action and reflection. In this paper we will first describe ARL as a concept, and then characterize the specific company program that is being researched. We present the "ideal" research strategy we created. We then describe the way in which real world constraints forced us to modify our design. We examine the dilemmas of boundary management experienced in the new research design, and conclude with reflections on lessons learned with respect to the next phase of the research.

What is Action Reflection Learning™?

Action Reflection Learning™ is a form of Action Learning (AL) practiced by Leadership in International Management Ltd. (LIM). Action learning draws its theoretical base from Reg Revans (1982), a British physicist, considered to be the originator of AL. McGill & Beaty (1992) present a working definition:

> Action learning is a continuous process of learning and reflection, supported by colleagues, with an intention of getting things done. Through action learning individuals learn with and from each other by working on real problems and reflecting on their own experiences. The process helps us to take an active stance toward life and helps to overcome the tendency to think, feel and be passive toward the pressures of life. (p. 17)

One of the main differences between ARL and AL is that there needs to be a dual emphasis in ARL on both learning and doing, with the understanding that people do not always know how to learn as a product of their experience. So the process of reflection, particularly critical reflection, plays a more crucial role than may have been originally conceived by Revans (O'Neil & Marsick, 1994).

In a typical ARL program small teams focus on strategically driven business questions. The teams meet during four, one week residential sessions held over a six to nine month period. During these week-long sessions the members of the four teams also meet periodically as a total community. During these community meetings participants engage in various learning activities. They also participate in reflection and dialogue sessions. In addition to the four residential

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[1] ARL™ Inquiry is a research group affiliated with Leadership in International Management Ltd. All authors are members of ARL™ Inquiry . Lyle Yorks and Glenn Nilson, Eastern Connecticut State University, took leadership for this article based on data collected by Lyle Yorks and jointly analyzed for this article with the following LIM members, listed in alphabetical order: Robert Kolodny, Adjunct, New School for Social Research; Victoria J. Marsick, Teachers College, Columbia University; Judy O'Neil, Adjunct, Teachers College, Columbia University.

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sessions, teams schedule working time between program meetings as needed for project work.

Three critical roles in an ARL program are the Program Director, Program Staff and the Program Assistant. The Program Director is responsible for overseeing the entire program and is accountable for its successful implementation. The Program Assistant handles logistics and coordinates arrangements for the program. Both participate as members of the total learning community. The Program Staff role is called a Project Team Advisor or PTA. The PTA's work with The Program Director to design the program and work throughout the program with project teams.

During the program PTAs lead the sessions, and through interventions challenge the assumptions of the participants and encourage them to challenge one another in terms of both their ideas and actions and the norms of the organization. Many of these interventions take the form of questions. Through these questions, participants are helped to make the implicit, explicit, and to surface what is usually undiscussable. Many of these questions are raised at critical points during team meetings in order to help the team recognize and confront dysfunctional group behavior and to encourage reflection when the team appears ready to act prematurely.

Beyond this, the PTA models critical reflection—reflection on the tacit, taken-for-granted assumptions that must be examined for people to reframe problems (Marsick & Watkins, 1990). Project teams almost always reframe the problems on which they work because they are not to focus their efforts solely on analysis; they also experiment with solutions, and in so doing, test their understanding of the problems and encounter feedback about the consequences of proposed changes from the entire system. Feedback leads teams to rethinking their understanding of the project problem as originally framed.

The ARL Program Being Studied

The study being reported here is taking place in a large, multi-national divisional company that is using ARL as a means of developing managers so that the company can transform itself into a global network organization. Management has determined that to remain competitive the company must function as a global organization, mirroring what is happening to many of its large customers. A 1992 corporate culture survey identified seven areas that needed to be addressed in order to enhance the ability of the organization to perform effectively as a global organization—teamwork, employee development, trust, leadership communications, conflict management, innovation and change. Three programs were scheduled to be held, each comprised of twenty senior level managers selected from various parts of the world wide organization. These twenty participants were divided into four project teams. Our research began with the second program and will continue with the third program. This paper reports observations of the second program.

The second program began in May 1994 with a residential week held in the Northeastern United States and concluded with the fourth residential week held in a Northeast seaside resort in October 1994. In between, the program met as a total community for two additional residential weeks: the second meeting in a resort hotel in Southern France, and the third week in an urban Asian city at the end of August. Additionally the four project teams pursued work on their projects throughout the intervening weeks. These project teams were global in composition. Each team worked on a project of strategic importance to the organization that was sponsored by a member of the company's Executive Committee. Each team had to provide a recommendation for its project, that had been in some way partially tested for implementation, at the end of the fourth residential week. This recommendation was made in a presentation to the entire program community and the Executive Committee.

Designing the Research: What Was Intended

This research has some non-traditional origins, one being that it was initiated by a consulting organization that essentially wanted to research itself relative to its work with clients. To initiate that research it was necessary to get client organizations to sponsor the activity and to establish a research team that could be independent of LIM while being sympathetic to its over all goals. Eventually two university based researchers with no links to LIM (one of which is the field researcher described below) were invited to join a research group led by a university based researcher who is a LIM partner and two other members of the LIM staff not involved with the program to be researched. This group has designated itself the ARL™ Inquiry. The role of this group continues to evolve as the research goes forward.

ARL™ Inquiry's goal has been to create an umbrella research strategy so that LIM can research different features of its technology in different companies, but could still strive toward the creation of a data base with some uniformity of focus and data. We intend to eventually develop grounded theory concerning the dynamics of ARL programs and their impact on organizations (Glaser & Strauss, 1967). Because LIM works with many clients, we expect that findings from this exploratory research will generate insights that, while tied most directly to the program studied, will also lead to toward the ultimate goal of generating middle-range substantive theory as the research is extended to subsequent programs in other companies.

We proposed to the company in question a research design that could be carried out at either of three, increasingly complex levels. We describe these levels here, but it is important to keep in mind that these levels illustrate what we proposed; what was actually agreed to is described in the next section of this paper.

Level one would focus primarily on each program: developing an understanding of strategic business issues embedded in the projects, examining the immediate impact on participating managers, and providing feedback about program design. Our hope was that four participant observers would be involved. Each would observe a team, taking field notes and conducting interviews.

Level two would include the above, and in addition, more effort would be made to collect data from people with whom the participants directly interact. If possible, ARL teams would videotape sessions, the teams would then participate in fishbowl sessions along with PTAs to feed back insights, which could then be discussed by participants—with the caveat that team members would retain the right to decide which segments would be used in this fashion. Focal questions would be posed to both participants and PTAs to generate deeper insights. In short, level two implied that the observations and insights "in progress" would become part of the program design to enhance the quality of reflection and learning.

Level two would integrate the research role more fully into the ARL process. We were aware that this would impact the experience of the program. However, even with a level one design, the research role was likely to have some influence on the program. ARL programs build close-knit learning communities that are learning laboratories; the presence of participant observers would be highly noticeable. We expected that program staff would have to build in some opportunities for the researchers to share their reflections with staff and participants. We knew this posed risks that needed managing so that generating valid information could be balanced against learning design needs. In either levels one or two, decisions about including information shared by the researcher with the staff for reflection in the total program community (participants, Program Director, Staff, and Program Assistant) would be made jointly.

Level three would address both levels one and two, and in addition, examine the longer-range impact on both managers and the company, as well as changes in the company's perception of itself as a global business or as a learning organization. Participants would be interviewed at selected points over time. Interviews would also be conducted with other people in the organization in order to document the extent of transfer of learning into the organization and the impact of project recommendations.

What was Agreed to by the Company

The company was well aware that many sensitivities had been generated by the first program. ARL programs are very time consuming for participants, and others in the organization must often pick up some of their workload. Recommendations from the teams generate additional work as they move into the implementation phase. The company president did not want to place more stress on the time demands of people in the organization. Additionally, the human resources director, who was also functioning as an internal Program Director, did not want to upset the effectiveness of the design of the program.

The research role was an unknown influence. The program staff was enthusiastic about the research, with LIM offering to underwrite part of the expense. After much discussion, the president and the Program Director did agree to the negotiated entry of one participant observer in order to allow observation and still safeguard against any likelihood that the research process would contaminate the program. Furthermore, this single observer was to fit into the program by occasionally being invited by the PTAs to share his observations with the group. The Program Director also required that participants be asked, at the end of the first weekly seminar, whether or not the researcher's participation was intrusive. It was agreed that the researcher would only continue with the program beyond the first residential week if it was okay with the participants.

The Role of the Researcher

At the end of the first residential week, the field worker had gained the confidence of participants and the Program Director, and hence was given permission to stay for the rest of the program. However, he kept a low research profile. He interacted informally with participants and the PTAs and the Program Director during the week-long events. On an opportunistic basis, he informally interviewed participants. He also observed project teams on a rotating basis and many of the program's other events, took field notes and wrote up his reflections. Along the continuum ranging from full participation to detached observation (Gold, 1958), the field researcher structured his activity as an observer-participant. Part of the agreement was that he would not typically comment as part of the program process unless invited to do so by the PTAs. However, as will become clear below, there were certain activities that necessitated his authentic participation as a member of the total program community and not as a researcher. Otherwise, he could not build and sustain a relationship with the group and would exist only as an alien presence.

At the end of each week-long segment, the field worker wrote up a summary of his insights. He then met separately with the Program Director to give him feedback. These observations were also shared with the PTAs. He also met with the other four members of the ARL™ Inquiry team who acted as a sounding board throughout the research. During these meetings the researcher would share his observations and the members of the inquiry team raised questions and made suggestions. The ARL™ Inquiry team is in the process of doing a content analysis of the data collected from this first phase of the study.

As he gained the Program Director's confidence, the field researcher was also allowed to conduct interviews with non-participants in the organization who were impacted by the program. He also participated in a team-building skills meeting in Holland held as one of the outcomes of a project from the first ARL program. The purpose of his participation was to gain more insight into the role of the PTA and to interact with people within the company to gain more data on how the ARL program was impacting the organization. For purposes of this meeting the field researcher adopted more of a participant observer role, as opposed to an observer participant role. This involvement reflected an increased level of comfort with the researcher on the part of the human resources director. The research role is thus being gradually extended beyond observation of the program itself.

What We Learned: Dilemmas of Boundary Management When Conducting Field Research on ARL Programs.

The remainder of this paper discusses the dilemmas and choices that had to be made by the field researcher within the context of the dynamic ARL program. The dilemmas of participant observation have been well documented (cf. Whyte, 1984). Our focus here is on the choices that confront the field worker in a very unusual field setting—a dynamic learning community that has been explicitly established for purposes of facilitating personal development and transformational organization change. ARL programs are designed to flexibly accommodate emerging interests; hence the field researcher became part of a web of complex interactions as feedback and observation were reflected upon by four different interest groups: the ARL program participants, the PTAs, the Program Director (also the human resources director), and the ARL™ Inquiry team.

Boundaries with Participants The researcher had to manage several boundaries. The boundary between himself and the participants was critical. The field researcher had to become sufficiently integrated into the program to be able to talk freely with participants at appropriate times, yet maintain a distance that kept him on the periphery of what was happening. The ability to talk freely with participants was a fundamental requirement for the research. As Whyte (1984) notes, it is not possible to reliably ascribe the meaning that people attach to events simply from observing their behavior or even listening to their verbal interaction.

Early in the program this boundary was a moving target that tested the researcher's judgment as he tried to aim at the right balance between integration and distance. As the project teams began forming and the group of twenty participants became a learning community, what was a collection of individuals emerged as an increasingly cohesive group with its own identity. The boundary defining the group was forming, and, at the same time changing, and it was important for the field researcher to establish his role within it or be left outside the emerging community. If the researcher moved outside the periphery of the boundary, he would be an outside intrusion, perhaps viewed suspiciously by participants, and in any event, he might be cut off from the kind of interaction that would permit reliable interpretation of the meaning of what he was observing. The researcher could not remain a stranger, or something of an enigma, and succeed in his research role. If the participants did not accept the researcher and the research role as a legitimate part of the learning community, even promises of confidentiality would not lead to open and frank sharing of meaning from the participants to the researcher. As Wax (1971) has written, "most sensible people do not believe what a stranger tells them" (p. 365). Additionally, the researcher's presence would most likely become a distraction, and possibly an impediment for the program. On the other hand, should the researcher move too far inside the boundary between himself and the participants, he would become too much a part of the story he was recording and intrude on another boundary—the staff would very likely come to see him as an unwelcome "loose canon" intruding on their territory.

In establishing this role the support of both the Program Director and PTAs was critical. At certain points in the program the PTAs would invite the researcher to share his observations of what had just occurred. Usually this took place as part of a stop and reflect intervention in the project teams[2]. At these times the researcher would briefly share some of the process observations he had made while observing the group. These would be descriptively given in a manner calculated to be helpful. Participants responded to these observations positively, and they provided the foundation for establishing a relationship between researcher and participants.

During the evening of the group's arrival for the first residential week, the researcher described his role to the participants as seeking to better understand the dynamics of the program as a learning process in order to help facilitate the design of such programs going forward. One of the PTAs described this role to the group as taking the "helicopter" view. Somewhat fortuitously, the next night the Program Director asked if "sky watch" had any comments following the evening activity. This nick-name was picked up by a couple of the participants and "sky" became his identity within the group. Having a metaphor name that described and legitimated the research role, while carrying a humorous connotation, was very helpful in integrating the researcher into the community. As the program progressed the participants became accustomed to the researcher's role, sometimes joking that "Sky isn't allowed to say anything until the end of the week." This comment was in reference to the practice of the field researcher sharing a summary of his observations following lunch on Saturday as each residential week was drawing to a close. These observations would take three to five minutes and would be directed toward the overall patterns of learning and group dynamics in the community. They would be stated as reflections on the process.

Despite their emergent familiarity with the research role, many participants continued to see the researcher as a member of the program staff, sometimes describing him as a "spare" PTA. At times participants would invite him to play such a role, and he would have to suggest that the question was best referred to the PTA. Still, judgments had to be made. For example, once a participant approached the researcher following a project team meeting the researcher had observed and, at the invitation of the PTA, had made a few observations during the "stop and reflect." The participant was struggling with changing certain of his actions in the group which he believed were counter productive and he wanted the researcher's thoughts. The researcher made the judgment that to decline would be jeopardize his position as a member of the community. Consequently, the two had a brief discussion around the participant's question, although the researcher avoided any hint of establishing a coaching relationship. Such interventions were occasionally necessary, but had to be kept to a minimum.

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[2] The "stop and reflect" is a regular feature of ARL programs. Participants "stop" the work they are doing to "reflect," individually and as a group, on what they learned about themselves, the project work, and their interaction as a learning group.

The researcher did not depend on a set of informants, a practice often used in field research (Jorgensen, 1989; Whyte, 1984). It would have been easy for him to succumb to the temptation of cultivating a special relationship with a select set of participants whom the researcher found to be especially helpful and insightful. In such a small community, in which the development of trust was being emphasized, the establishment of such relationships would run the risk of being a dysfunctional intrusion, and in the researcher's judgment, possibly unethical. Of course, some participants were more insightful than others, but the researcher worked to maintain his relationship with all of the participants. Interviews were conducted when the opportunity presented itself or when certain comments or events required more understanding. The two examples below illustrate how these opportunistic interviews were often triggered.

It is part of the program design to begin several of the mornings during the residential weeks with a period of reflection and dialogue that typically extend for 45 minutes in length. All members of the community, including the researcher, would sit with their chairs in a large circle. Following five minutes of reflection, people would voluntarily share any of their thoughts. At the beginning of the second week, one participant stated the following:

> When I left the first week I was very unrealistic. I tried to be more aware (of what was happening in the organization). . . . (This) led to frustration, I saw stuff in the organization (pause) . . . . I came in (here) with a bad attitude. My (project) group turned it around. I want to say thanks to my group. (Quote recorded in field notes, July 11, 1994)

The researcher did not follow up on this comment immediately following the reflection and dialogue period, but noted it. During an afternoon break on Thursday, he approached the person who made the reflection and asked whether or not he could explore the comment. The two sat down and had a fifteen minute "opportunistic interview," the substance of which was recorded immediately afterward in his field notes.

In a second example, during a mid-week dialogue in the third residential week, the group was reflecting on an issue sensitive to the entire community—trust. One of the participants said, ". . . what has struck me is that (the company) is a very gossipy culture." That evening the researcher asked the participant about the comment. The two went to a quiet area and talked for forty minutes. This same incident provided rich observation-based data as well. The dialogue was conducted because the staff had become aware of the issue, which was manifested as an undercurrent pointing to a lack of trust on the part of some participants. The dialogue evolved into a very powerful exchange on how the program participants were functioning as a group. This seems to have been a watershed moment for the program. What had been an undiscussable was brought out into the open in a way that seemed beyond the experience of most of the participants. To the observer, who was not embedded in either the dialogue or the issue, it seemed that the ARL process had permitted the culture of the host organization to reproduce itself within the dialogue circle where it could be discussed. The question that was begging to be addressed "how do we use where we are as a group to change the company's culture." The group was struggling with norms around information sharing and trust, and with the question of who guards the norms.

Boundaries with PTAs Another boundary was between the researcher and the staff. The researcher had to avoid becoming too close to the staff as well. As the program progressed a professional bond formed between the Program Director, the staff, and researcher. As this comfort level grew the researcher had to remind himself not to identify with the PTAs, but to remain centered in his role. As an experienced consultant, he had to avoid the temptation to insert himself into the process as he became a part of the community. This temptation was great since, as an observer, he could often see things that he might have missed if more immersed in the process. He only made comments during the program when invited by the PTAs. Once, a member of one of the project teams that was recommending a change in the structure of the company approached the researcher with an invitation to critique their recommendation. "You teach organizational theory, and consult on organizational design, right?" he asked. "We are looking for outside feedback. Why don't you give us your thoughts." The researcher had observed much of their discussion and did have concerns. But to voice them would be to fundamentally change his relationship with the process. The offer was declined saying, "given the implications of your recommendations, and my responsibilities as a researcher, it would be inappropriate for me to engage in that discussion."

Maintaining the boundary between the researcher and the PTAs was complicated by the agreement that he would write up and share his observations with the Program Director and the PTAs between residential sessions. These observations were talked through in detail with the Program Director and at least one of the PTAs and were taken into consideration going forward. This input was one of the justifications for the company undertaking the cost of the research. The PTAs would also periodically seek his observations during the course of casual conversation during the residential weeks. Once, over dinner in France, one of the PTAs asked, "What do you think? Will we see any storming this week?" "I think you are more likely to see some storming against the staff," the researcher replied, sharing a certain undercurrent he thought he had observed. This became a topic of conversation.[3] Such conversations and dialogues, however, provided a basis for a growing professional bond. The researcher wanted the research role to be useful, but had to avoid becoming central to the staff's activities.

Boundaries with the Program Director The researcher interacted with the Program Director in several roles. First, he was the key client contact for LIM. The researcher had to be mindful of the client-consultant contract in providing reports to the organization about the research function. The researcher had a special relationship to the Program Director within the program because, in that capacity, he also wore multiple hats. Trained in organization development, he had decided to function as a PTA during this second program. He was, as previously mentioned, the human resources director with responsibilities, as well, for organization development. Wearing these three hats proved to be complicated. As time went on, the other staff were becoming convinced he should not continue as a PTA in future programs. He was not convinced. The discussion was ongoing. At one point, over a Saturday night dinner during the second week of seminars, the Program Director suddenly turned to the researcher and asked, "What do you think?" Immediately, the researcher was thrust inside the boundary between the staff and the program director. At first, the field worker said "I am just an observer." "What the hell does that mean?" came the reply. The researcher gave his observations on the issues involved honestly, but avoided any subsequent involvement in this policy decision. As the Program Director and staff became comfortable with the researcher, other issues that would potentially place the researcher inside the boundary between the other two parties had to be quickly recognized and resolved, usually through discussion, sometimes through simple avoidance.

Managing these various boundaries required that the researcher be constantly making decisions. One of the most recurrent of these choices centered around when to be taking notes. Most of the time he took notes, a practice made easier because the PTAs frequently did so as well. The days were long and the volume of potential data so great that one could not rely solely on recall, even a few hours later. However, almost every text on field work notes that such research requires a good memory—the ability to hold key events and verbal commentary in one's mind until one can record them later in field notes (Fetterman, 1989; Whyte, 1984). That ability was necessary as well. There were instances where taking notes had the potential, it seemed, to make people uncomfortable and perhaps alter what they might say. At other times, taking notes might separate the researcher from the group in to visible a way.

An example of the former is the dialogue described above that took place around trust during the third week of the program. The researcher did not take any notes during this 45 minute dialogue, even though it was clear that this was an important event in the group's development as a learning community. He did not want to risk causing someone to not participate because of the note taking, nor to risk distracting people from the dialogue which was intense. Immediately following the session, he went to a quiet spot and spent the next hour reconstructing the event in his field notes and trying to record key comments as accurately as possible.

Another example comes from the closing of each residential session during which time each person shared any final reflections on the week's experience. The researcher took no notes and volunteered his reflections. The researcher, although in a unique role, was still part of the community. At times such as these, it seemed important to the researcher to put his role as a

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[3] This undercurrent did eventually manifest itself and become effectively resolved.

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participant in the community ahead of his observer role.

Choices also had to be made regarding when to observe which project team. This was a boundary issue as well as a research issue. The researcher needed to obtain data on all four teams. This could be done through direct observation and subsequent interviews with the participants and PTAs. However, his relationship with participants was to a large extent maintained through observation of teams and the periodic feedback that the researcher provided when invited by the PTA. If the researcher did not observe a team for most of any given week, one or two members of that team would invariably ask, "Where have you been this week?" At times the researcher decided to move to another team, even when he was interested in what was going on in the team he had been observing. Whenever the researcher entered a team's work area for observation, he asked their permission: "Is it all right that I sit in?"

Boundaries with the ARL™ Inquiry Team The inquiry team members not currently doing the field work played an important role in the field researcher's focus in the field. Whyte (1984), quoting his teacher, Everett Hughes, writes:

> "The most important things about any people are those that they take for granted." Therefore, the participant observer must periodically question the dynamics of behavior taken for granted. It is useful to leave the field every few weeks and report what you have been learning to people unfamiliar with the scene. (p. 27)

This was clearly the case in this study. Early on we used the metaphor of a "kitchen cabinet" to capture the relationship between the field researcher and the other members of the Inquiry team. Between residential weeks the Inquiry team met to debrief and reflect on the field researcher's experience and observations. During these meetings the other members of the Inquiry team posed questions about the story that was unfolding, heightening the researcher's awareness of certain events and raising issues of theoretical interest.[4]

Boundaries between the field researcher and the Inquiry team revolved around the degree to which the team could provide an outside perspective to the field researcher. Because the field researcher was the primary source of data, other members of the research team were dependent on his summaries and discussion of his experience. The team gave the researcher guidance as to what members might do in the next round of field work, but they also had to trust him to use his judgment in the field to modify focus and direction based on his on-site assessment.

The team was designed as a mix of people internal and external to LIM. One of the external members had not been previously associated with LIM, nor was he directly involved with the client or its program. He was, however, a colleague of the field researcher, and became his primary sounding board in between meetings of the research team, for reasons of both geographic proximity and professional bonds as colleagues. This team member took on a role within the research team that shared characteristics resident in ARL program design, that is, building in the perspective of the outsider who can ask questions that might otherwise not occur to those more familiar with the situation.[5] The outsider can often see and voice norms and assumptions that have become taken-for-granted by insiders.

There are also boundaries that had to be managed between the ARL™ Inquiry team and the LIM practitioners. The research was initiated because LIM is interested in being consistent with what it is selling—engaging in reflective practice. Yet as the research evolves, the interpretations of the team may not be fully shared by all in LIM. This relationship between LIM and the Inquiry team must be developed as the research moves forward.

Lessons for the Study of ARL and Similar Programs Within Organizations

We began our research with a design that we had to modify to meet the needs of the client. Upon reflection, we realize that what seemed, at the time, a compromise has turned out to be a strength. The design has enabled the ARL™ Inquiry team to identify important design variables from the

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[4] It should be noted that these roles will shift as the research is extended into other companies. The participant observation role will be filled by other members of the team.

[5] The LIM research co-ordinator was consciously aware of building in this "outsider" role. However, the Inquiry team never explicitly discussed this aspect of the role until they gathered to analyze the full data set.

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ground up before embarking on a more ambitious research project.

The design has also enabled the research team to understand in fuller detail the sensitive dynamics that exist around boundary management that have a much greater impact on the program than we would have anticipated. We anticipate, eventually, a research design that involves teams of participant observers. The issues that we have raised in this paper will be useful in briefing the research team, and in planning for explicit discussion among research team members of boundary management issues as they emerge. We will also plan carefully for feedback as the program progresses with PTAs and the Program Director that takes the fragile nature of the relationships into account.

As the Inquiry team reflected on the complexity of the field worker's role, we were struck with the way in which the research reinforced, and was modeled upon, the same principle that is at the heart of ARL program design: the introduction of the role of the sophisticated barbarian who, by his/her very nature as an outsider, is intended to see the situation through fresh eyes and to use those insights to help raise critical questions that lead to reframing of one's understandings of what it means to be a manager and leader. ARL intentionally nurtures this capacity in participants. The PTA is to model this function. Through the research, we introduced a field worker who took this role as well, although not intentionally or consistently.

Project teams are designed so that no one is already an expert to ensure that naive questions get raised. Diversity is also built into teams to ensure that new ways of looking at a problem are considered. Likewise, a key aspect of the PTA role is to help participants gain fresh insights. The research has the potential for introducing this same function at yet another level because he/she is asked periodically to share the outsider's perspective with participants, PTAs, and the program director. The field worker could thus model at a level, one step removed, the same process that the PTAs try to model for the participants so that they, in turn, learn how to raise fresh questions within the program, and eventually, back on the job.

From an ARL perspective, then, it might not be desirable for the field worker to keep his insights completely to himself. Yet, from the research perspective, the field worker had to manage sufficient distance so that he could retain the eye of the outsider, as well as minimize bias that could occur if he became too fully assimilated into the program's culture. The ARL™ Inquiry team played a key role, in this regard, and extended out to yet another level the function of the sophisticated barbarian by the fact that they, in turn, tried to raise naive questions of the field worker.

Schön (1987) describes this kind of phenomenon as a "hall of mirrors," in which the person functioning as a learning facilitator is engaged in the same process as that in which learners are engaged, even though the context of their practice might differ. Hence, one can use the interactions between learner and facilitator to address the same dilemmas that are inherent in the learner's situation because these interactions mirror those faced by the facilitator. Schön discusses this phenomenon vis-a-vis the teacher as a coach; we have looked at it here in terms of a common design principle—raising fresh insights for purposes of learning. LIM might pay attention to the potential of this role for enhancing fresh insights, particularly in relationship to the PTAs and the human resources director, and occasionally in relationship to participants in the program as well. The Inquiry team, in turn, can take this role vis-a-vis the field worker.

Finally, there is another boundary in this case study that, given space limitations, has not been explored, but of which the researcher must be very aware: that is, the boundary between the program and the larger organization.

There is a long tradition of action research, in which researchers study the change they are facilitating. Here, the researcher is on the periphery of the action, although he or she does play a role in helping both participants and staff reflect on what is happening. Our experience suggests that much can be learned from such a "helicopter" perspective of the entire field.

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Using Critical Incidents in Teaching HRD: A Method for Fostering Critical Reflection and Dialogue

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This paper reports the results of a study that used the critical incident method to stimulate students' reflections on their classroom learning experiences, and to provide evaluative feedback to the instructor. The findings confirm the value of the activity in its ability to model effective evaluation practice, highlight the importance of sound instructional systems design, and understand one's own learning style.

In my role as an HRD faculty member, I have always felt that my teaching of instructional systems design and program evaluation was for students, like "viewing a play within a play." That is, as I teach about teaching others, my students silently critique and sometimes assimilate what I do. For this reason, I have become keenly aware of the need to model effective HRD practices in my classroom. In teaching about the importance of program, process, product and organizational evaluation in HRD, I stress the critical nature of ongoing, collaborative, and effective communication throughout the evaluation process.

In the past I have relied on mid-term evaluations I developed and the University's end of course evaluation as the primary evaluative feedback of the course. But after one fateful teaching experience, I knew I needed something else. I was teaching a class on program evaluation to a group of teachers who were nearing the end of their graduate program. Though I had heard from other instructors they were a "tough" group, I was fairly certain I could excite them about evaluation. For the first four weeks, all seemed to be going well. When I lectured, I noticed smiles and nodding heads, and apparent interest in the topic. When the students were engaged in group exercises and discussions, they seemed genuinely cooperative and productive. But after the fifth class, one of the students asked to talk with me after class. Expecting he wanted to talk about his final project, I smiled and said "Sure." However, when we met, he just about knocked the wind out of me by saying that he was speaking on behalf of the class, and that the class had decided it was a waste of their time. I won't go into the entire conversation, but suffice it to say, I was in a state of shock and don't exactly remember how I got home.

Over the next few days I received many phone calls and faxes from students assuring me that this one person didn't reflect the opinion of the entire group of teachers. These calls made me aware that some of their issues were about the program and not about the course. I decided to write a letter to the students asking them to come to the next class prepared with ideas for how to change the course. The following week we discussed the impetus for this surprising revelation, and as we talked, it became exceedingly clear that a few students had complaints with their principal's strong recommendation (heard by some as a mandate) that all the teachers get their Master's degree within two years. It wasn't the class that was the problem, it was just their having to be there! To motivate those who didn't want to be in the program, we did make some changes to the course as a result of this conversation. The outcome, as evidenced in the course evaluations was quite positive.

As I began thinking about how I could have seen the problem earlier, I remembered the critical incident technique Stephen Brookfield introduced us to at the University of St. Thomas. This method asks students to respond to a set of evaluative questions each week which the instructor then reads and summarizes. The summaries are returned to the students the following class period where they are discussed, and possible changes in the course are negotiated. In the last year I have used the critical incident technique with my students. In an effort to ascertain the students' views of its effectiveness and to clearly identify its benefits to myself and others, I implemented an exploratory research project. The questions that guided this study were: (1) In what ways do students benefit from participating in the critical incident technique? and, (2) What effect does the critical incident technique have on teaching practice?

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Literature Review

The adult learning literature is replete with theories, models, and instructional strategies that are intended to guide the teaching of adults. The importance of collaboration, praxis, and the facilitation of critical reflection has been strongly recommended when teaching adults. (Brookfield, 1986) At the same time, the role of experiential learning, which suggests that individuals learn the most when they are actively engaged with the learning material, has also been a theme in the learning style literature. Kolb (1984) viewed experiential learning as a four-cycle process that includes experience, observation and reflection, abstract reconceptualization, and active experimentation. His model emphasizes that while experience forms the foundation for learning, reflection is critical to the application of that learning.

The role of reflection has also attracted much attention and support in the educational literature. Much of this interest is attributable to the work of Donald Schon (1983, 1987) who challenged scholars and practitioners to ask, "What is the kind of knowing in which competent practitioners engage?" (1983, p. viii). Reflection is described as the "practice of analyzing one's own actions, decisions, or products by focusing on the processes involved" (Killion & Todnem, 1991), and is defined as:

> A means by which practitioners can develop a greater level of self-awareness about the nature and impact of their performance, an awareness that creates opportunities for professional growth and development. (Osterman & Kottkamp (1993, p. 19)

Saban, Killion & Green (1994) describe three types of reflection. The first, "reflection-in-action," occurs when we watch ourselves as we act out certain thoughts and actions. The authors liken this to an "out-of-body" experience. It happens most when we try to take ourselves outside to see what we are doing from a different perspective. An example would be the trainer who constantly assesses how well the program is going and makes adjustments as necessary. The second type of reflection is "reflection-on-action." This is the most common type and occurs when we replay a situation in our mind. This process allows us to review, critique, and relive the experience, and to form opinions and judgments from this activity. "Reflection-for-action" is the third type of reflection. Predicting how we will use what we have learned from the experience is the focus of this activity. Here we use our increased knowledge to plan for the application of our learning. The argument is made that when reflective practice is interwoven through experiential learning activities, higher levels of knowledge and professional competence will be attained.

There have been a number of suggestions recently for how one might facilitate the development of reflective practice in an organizational setting. Some writers have suggested using guided book reviews (Schmale, 1994), program evaluation methods and processes (Preskill, 1994), and task forces or study groups (McCarthy & Still, 1993) as the means by which a group of individuals may reflect in, on, or for practice. One strategy that is receiving increased attention is the use of critical incidents. This method asks that participants write brief descriptions of their experiences that are considered to be significant or memorable.(Brookfield, in press, Tripp, 1993, Woods, 1993) The usefulness of this approach has been most recently documented by Brookfield (in press) who maintains that using critical incidents: (a) alerts instructors to problems before they become problems, (b) encourages students to be reflective learners, (c) encourages diversity in teaching, (d) builds trust between the instructor and student, and (e) suggests possibilities for the instructor's development. The use of critical incidents may be a particularly appropriate method for instructors' wishing to model experiential learning and encourage reflective practice in an instructional setting.

Research Design and Methods

I chose to implement the critical incident approach in two graduate courses on program evaluation between February and December, 1994. Both courses were taught as core requirements in HRD programs in two different universities. One course met once a week for fifteen weeks, and the other met every Wednesday evening and three Saturdays for eight weeks. The 35 students in these two courses worked in a variety of settings including schools, businesses, non-profit organizations, healthcare, and the military. For most of them, their primary responsibly was to educate and train adults in their district or organization. Those who were not currently in HRD positions, were attending graduate school to qualify for future employment in the profession.

At the beginning of each class period, students were provided with a survey-like form that asked five questions. These were: (1) At what point during the class tonight did you feel most engaged with what was happening?, (2) At what time tonight did you feel most distanced from what was happening?, (3) What action did someone take in class that you found most affirming or helpful?, (4) What action did you find most puzzling or confusing?, and (5) What surprised you the most in class tonight? These questions are very similar to those used by Brookfield (in press) in his work on teaching with critical incidents.

Students were told that they should write down things they think of in response to these questions during the class, and/or during the last ten minutes of class which was allocated for this activity. They could then submit their critical incidents anonymously or could identify themselves on the paper if they wished. I explained that I would summarize their reflections for the following week, where we would read the summaries and discuss any issues that arose. I emphasized that I would not judge their responses or make interpretations in these summaries. Rather, I would look for patterns, themes, and alternative viewpoints and represent everyone's thoughts as accurately as possible. Because I felt it was important that I too respond to how I experienced the class, I always included my reactions at the end of the summary.

At the beginning of class each week the students were asked to read the critical incident summaries (which were typically approximately one-and-a-half pages). After they finished reading them we discussed their reactions and I addressed questions or concerns they had about particular concepts or material covered the week before. The following is the summary from one of the class meetings.

> TLT 508 Critical Incident Summary
> 10/27/94 (#11) N=8
>
> Most Engaged
>
> Six of the eight responding said they were most engaged during the small group discussions of your projects. One person wrote, "When we broke into our project discussion group. We got really involved and were very helpful to each other." Two people felt most engaged during the survey redesign work, and one person liked the information and role play on interviewing.
>
> Most Distanced
>
> Of the four responses to this question, three people felt distanced during the survey editing activity. One person said there was lots of confusion in her/his group, one person felt distanced when I told the groups they only had seven minutes left, and one person "felt that we didn't get very much done because our group was not "connecting." The fourth person who responded to this question said he/she felt most distanced during the break.
>
> Most Affirming or Helpful
>
> Five people thought that the time they spent in groups working on the evaluation plan projects was most helpful. One person specifically mentioned her group members as being helpful (Liz, Cynthia, Norma, Merriam). The sixth person responding was appreciative of my suggestion that this person's group move on from the section on which they were working because of the limited time.

Most Puzzling or Confusing

Only one person wrote anything for this question. Their comment was related to the survey editing activity.

Surprised You the Most

Six people mentioned how enjoyable and helpful the group discussions were on the evaluation plan projects. Their comments included:

- How useful others' ideas are to my project.
- I actually enjoyed getting into groups to discuss the projects.
- Overall I felt very good about today's class. We had lots of class interactions.
- The diversity and quality of the proposed evaluation plans and the intended applications.
- How very helpful the project discussion group was.

One person thought focused questions for the groups would have helped guide the discussions.

H. Preskill's Reactions

I am very pleased that you found the small group discussions on your projects so helpful. We will try to include a bit more time before the end of the semester to do another check in with each other. It is interesting for me to read the comments on the survey work. Though your discussions were probably made more difficult by trying to reach consensus on how to improve the survey with only 45 minutes, I do think the activity demonstrated the complex nature of developing a useful survey that will result in quality data. I do appreciate the efforts you made to work together.

As I this class and think about changing parts of it for the next time I teach it, I continue to think about what we could leave out given the fact that most, if not all of you, will be taking either EdFnd 500 or 501. Any feedback you have about replication would be greatly appreciated. I hope by the 7th you will made good progress on your projects.

To evaluate the use of the critical incident technique, students in both courses were asked to complete one last set of questions. These questions included: (1) What have you learned about yourself as a learner in responding to these questions each week?, (2) What have you learned about course design and delivery from the class's involvement with writing critical incidents?, (3) In what ways has this activity contributed to your learning about evaluation?, (4) What do you think I have learned from reading your critical incidents each week?, (5) In what ways did writing critical incidents each week negatively affect the course?, (6) What surprised you the most about writing critical incidents each week?, and (7) Would you recommend I ask students in my other classes to write critical incidents each week? In summary, the data for this research resulted of 218 critical incident forms, 17 summaries, and 24 critical incident evaluations.

Data Analysis

The first analysis of the data analysis was conducted during each of the courses when the students' critical incidents were summarized after each class. The second phase of the data analysis involved conducting a content analysis of the critical incident summaries and evaluations for this research study. Categories for emergent themes and patterns were developed and the data were coded accordingly.

Findings

The analysis of the critical incident data revealed several implications for HRD practice. The first theme addresses the value of the activity for modeling evaluation in teaching and training. Insights into the instructional design process was the second theme. The third area of learning resulted in increased self-consciousness about one's own assumptions and beliefs and related communication issues that affect individuals' learning styles. The findings will be reported by each theme.

Increased Understanding About Evaluation From the data provided by the students it is clear that they saw the critical incident activity as an effective evaluation tool for providing "instant feedback" to me about how they thought the class was proceeding. By modeling the use of evaluation as formative feedback, students were able to learn how constructive information could be used in a non-threatening, productive way; that evaluation can be a positive endeavor and not something to be feared or dreaded. It also illustrated how qualitative data can be analyzed collaboratively. One student on the final evaluation survey said, " It helped me see how narrative can be gathered and compiled in a way that allows the readers to draw conclusions (rather than the researcher making firm conclusions from the data)." For one student the key was learning that evaluation is a process: "Now I see more clearly that evaluation is a continuous activity that we have to conduct throughout our entire lives."

Several students mentioned that the critical incident activity was an effective method "for both the students and instructor to really know what is going on in class." Students were also able to see the application of evaluation to training and how the trainer must often adapt her methods or approaches to meet the needs of different groups. For example, one student wrote,

> It provided good feedback both ways to help the students understand what was happening in the course as a whole, and it was good for you to understand where students were coming from. I noticed you modified things every so often to accommodate our needs. This was very positive.

All of the students responding to the final evaluation of the critical incident activity recommended I not only continue using the process in my other courses, but that critical incidents be used in all of the Master's program courses. As one student explained, "I would have liked to have them in all my previous classes. I think they also give you (the instructor) important feedback during the course of the class that normally you might not get until the end."

Increased Learning About Instructional Systems Design The most significant learnings were related to issues concerning the design and implementation of instructional programs. The themes that emerged from the data included the value of experiential learning and group activities, appreciating individual differences, the helpfulness of handouts (transfer tools), the importance of maintaining an effective pace for the course, and the meaningfulness of establishing a positive relationship between the students and instructor.

Learning from Experiential, Hands-on Activities Nearly every critical incident form contained comments on the positive aspects of the experiential learning exercises and activities that were used in class. Whether it was designing a survey in small groups, addressing the politics of evaluation through a small group case study exercise, or sharing their own work in small groups, the students always wrote about the helpfulness and amount of learning that took place through group interactions. As one student explained,

> I think you have learned some things about us as learners. For example, I think these sheets gave you insights into the relative lack of research background we have. I think you learned that we like to have an activity in each class.

After a small group activity where students read excerpts from Wheatley's (1993) book, Leadership and the New Science, another student wrote, "Our group had a very stimulating discussion. It brought out some excellent and diverse insights. Some really interesting thoughts to chew on." Comments such as these reinforced the importance of designing instruction that is situated in the context in which learning takes place and is based on the interactions between individuals and groups. (Wilson, 1993)

Benefits of Group Activities In addition to the students enjoying the experiential learning activities, they also frequently mentioned the value of just working together and obtaining feedback from each other. After one small group discussion, one student wrote on her critical incident form, "It really helped to get together in groups to clear things up." Another said that he liked hearing normally silent people speak up in small groups. In one of the courses, a student thought the group was "bonding" particularly well because of the critical incident activity. After one student's personal story about a situation at home, one person mused, "we're getting to be a real cozy group."

Valuing Individual Differences Nearly every week, students expressed surprise and interest in the variety of perspectives their peers represented on issues discussed in class. This realization helped students appreciate the need to design instruction that allows for differences in work experience, ethnicity, gender, and other variables that affect how we view the world. Three students described their learning in the following way:

> I was surprised at times by the varied reactions of other students. The variety of answers to some of the questions were sometimes poles apart. It surprised me how people interpreted some of the things discussed in class. It was a positive experience because it gave me a little more tolerance for other people's opinions.
>
> It was interesting to hear other's reactions and why they thought the way they did. They often surprised me, but made me more aware that others have a different perspective.
>
> You can't please all the people all the time. Every activity seems to have some supporters and some dissenters. Often what was someone else's favorite activity bored me. Therefore, a variety of activities is important to engage all - at some point!

And, even though most of the students had already taken an adult learning course, the critical incident activity further reinforced the need to design instruction for individuals with different learning styles. As one student explained, "I learned how varied learners are and how important a variety of approaches are so that everyone can benefit or learn." In spite of differences in perception, students would often express gratitude to other students for helping clarify a point, provide an example, or agree about some point of confusion. Several students wrote that they were impressed with other students' "wealth of knowledge."

Helpfulness of Handouts In teaching students about how to design instruction that maximizes the transfer of learning, the use of job aids is often recommended to help trainees remember important material from the training experience. I make it a point in my classes to provide many handouts on different colored paper. While I have been accused of killing many trees, the students' critical incident comments often referred to the usefulness of the handouts and how they will be able to use them later back at work.

Maintaining an Effective Course Pace Students often noted on the critical incident forms that they liked being given choices about how to conduct the class. I often asked them to decide how much time they needed for a particular activity, or if they wanted to do an exercise to further reinforce a concept or go on to the next topic. Their written comments confirmed they liked having these choices. Furthermore, their feedback provided information for making course adjustments. For example, by identifying what they found to be confusing or puzzling, they were able to communicate the need to spend more time on a particular concept in a future class. These "mini-needs assessments" enabled me change the speed of the course's delivery.

Enhanced Relationship Between Students and Teacher A theme throughout the critical incidents and one emphasized in the final evaluations was students' appreciation of how the activity allowed me to "listen" to students' needs and to respond to their concerns in a "forthright manner." One student explained, "I felt I had a vehicle to let you know my likes/dislikes about class. I felt you were listening to what we said." Another student wrote, "I was so impressed with how well you 'listened' to us via this vehicle. The form helped to focus on items that I normally would not have written about (and thus not thought of or maybe not recognized)." My ability to listen and respond to students issues, concerns, confusions and positive comments, contributed to a collegial working relationship that reflected a true adult learning experience.

Increased Self-Awareness of Own Learning Style Not only did students see the value in the critical incident activity for instructional design and evaluation, but they appeared to develop a better sense of their own learning style. The activity became a catalyst for students to critically reflect on themselves as learners, which for some, was a relatively new experience. The following comments describe this effect:

> For me it helped analyze my "learning" each class and helps bring the class to a close.
>
> I have learned that over the years I have become increasingly self-conscious about my classroom behavior to the point that I often over-reflect after class about something I said or did in class and how it was received by other people. I liked the critical incidents because it allowed me to reflect before I leave the class.
>
> I've learned that sometimes I'm quite a unique individual, while at other times I'm right in line with other students. The main thing that has helped is that it has given me a chance at the close of each class session to reflect on the activities of that class. That immediate reaction really helped me to retain more of information discussion each session.
>
> I am more similar to my cohorts than I might have thought! I am human and it's great to know that!
>
> So often we go through our days...and we never think back about what we did, why we did it, and how we could improve. It [the critical incidents] helped to focus.

Conclusions

While I was fairly confident that the critical incident activity would be useful, I did not expect quite the overwhelming support it received by the students. Though there were a few groans in the beginning (reflecting the "another form" mentality), after the second or third one, most students became serious and committed contributors.

The benefits from using the critical incidents were many. In addition to reinforcing the value of evaluation, designing active instruction for a variety of learners, and self-reflection, they seemed to contribute to the group's development as a cohort of learners. Because I did not require every student to hand in the critical incidents each week (it was strongly recommended but voluntary), I often did not receive one from each student. I told the students that was fine, but they were missing an opportunity to share their thoughts. Some students explained that on some nights they just had nothing to say, or were too tired. While this was a legitimate explanation, I've decided to make some changes in the process in future courses. I want to further capitalize on the students' learning. I have now copied the critical incident forms on NCR paper so that students will be able to turn in one copy to me and keep one copy for themselves. At the end of the semester they will be asked to write a two-to-three page reflection paper using what they have written on the weekly forms. I hope this assignment will spur increased participation and thoughtfulness of their responses, and most importantly, will provide them with a final pulling together of everything they experienced in the course.

The critical incident method has much to offer HRD instructors. It provides us with an approach that models what we teach - the need to build adult learning principles into our instructional designs. While this research was exploratory, it lends promise and hope to enhancing our teaching.

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Using a Real-Time Feedback System in Managerial Education

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One of the challenges educators face is improving the quality of instruction. This exploratory study investigated whether an immediate feedback system (IFS) added value (quality) to students' learning experience. The technology of the IFS permits instructors to assess students' comprehension of seminar material and immediately examine aggregate results. The author using an IFS with a total of 207 managers attending continuing education seminars found that the IFS added value to students' learning experience.

Improving the quality of classroom or seminar instruction is a challenge all educators face. The author of this study focused on two different aspects of quality. One aspect of quality focused on students as customers of instructional processes. As customers, they have expectations regarding the content and process of the instruction they received. Some processes instructors use may add value to students' learning experiences. The literature suggests that students categorized as adult learners have specific expectations of their learning experiences. According to Knox (1987), adult learners prefer active roles as users of education instead of recipients of education. Furthermore, effective teaching depends on being responsive to the students in the classroom (Apps, 1991). Therefore, the teaching process instructors use may well affect students' perceptions of the quality of instruction.

The second aspect of quality focused on reducing the gap between current and desired comprehension of seminar material. Instructors have traditionally used periodic exams to determine students' comprehension of reading and lecture material. This examination process, however, does not give instructors real-time feedback to determine if students comprehend material shortly after they have read or listened to the material. Finally, the danger with this process is that students have to do most of the work in comprehending the material even if instructors do not present the material clearly.

One of the major ways to improve quality is to improve the process or operational steps used to turn input (resources) into output (outcomes). Instructors need a process that enables them to gather information about students' baseline knowledge proficiency and mutually establish learning objectives. According to Knox (1987), the most valuable information instructors can obtain to help adults learn is information about their current proficiency (knowledge, attitudes, skills) in areas they wish to receive education. Proficiency is the capability to perform effectively if given the opportunity. Typically this entails the combination of knowledge, attitudes, and skills. Knowing current proficiency, instructors and students can mutually establish desired proficiency. Collecting parallel data about current and desired proficiency helps instructors identify discrepancies. However, it is difficult to obtain such data in a non-threatening manner and to quickly turn the data into information that is useful for instructors and students.

A new user-friendly teaching method is available and is the focus of this study. This new teaching method enables instructors to use a real-time assessment of students' comprehension of seminar content and their evaluation of seminar content and teaching. Technology makes it possible for instructors to use an immediate feedback system (IFS) to create a real-time feedback process between teachers and students. The system consists of a computer, an interfacer linked to the computer, remote response pads, an authoring program in which the instructor can write quiz questions and teaching evaluations, and an LCD overhead projector. Instructors project a quiz question with alternative answers on an overhead projection screen after they have presented specific seminar content. Students enter their responses to the questions on their remote response pads. Within minutes student aggregate results are presented on an overhead screen.

The IFS can be used to assess students' prior knowledge (understanding) of seminar content at the beginning of the seminar. This type of proficiency testing does may not make adult learners anxious because students' responses remain anonymous. The instructor and the students have an opportunity to view aggregate results projected on an overhead screen and mutually

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determine the baseline understanding of the seminar material to be presented. The objective of this assessment is to alert instructors about high and low knowledge areas. This method provides instructors with information that can be used to mutually establish learning needs with students and to allot more time to teach in areas of low knowledge.

Throughout the seminar, instructors uses the IFS to determine students' comprehension of the seminar material shortly after the instructors present the material. As a technological teaching tool, the IFS could also help students increase their comprehension of seminar content in an interactive and non-threatening manner. Using the IFS, instructors know immediately if they need to present seminar material again to increase students' comprehension. This is a radical departure from the traditional evaluation which suggest that there is range of comprehension because of students' ability to grasp the material. The author's belief is that instructors need to present seminar content in a manner that increases the comprehension for all students. Therefore, a student's comprehension of seminar material is in part, dependent upon the instructor's ability and skill to present material clearly.

The quality of instruction can also be improved by collecting feedback throughout the seminar instead of waiting until the end of the seminar. McCaskey (1993) recommends using feedback sheets throughout a course. However, this means that the data on each of the feedback sheets needs to be tallied and then a report needs to be generated from the data. The IFS makes it easy to conduct real-time student evaluations of the seminar content and the instructors' presentation throughout the seminar. In a typical one-day seminar an instructor can ask students to evaluate throughout the seminar. The aggregate evaluation results can help instructors make adjustments in their selection and delivery of seminar material.

The department the author works in was interested in determining whether students felt that the quality of their learning experience was enhanced by using an IFS. If students felt positive about using IFS then the department would purchase an IFS. The author conducted an exploratory research study to measure students's reactions to the following research questions:

1. Will students report that the IFS system helped them increase their comprehension of seminar material?
2. Will students perceive that an IFS added value to their learning experience?
3. Will the IFS help an instructor adjust the selection and delivery of seminar material?

Method

The participants in the study consisted 207 managers attending non-credit continuing education seminars in managerial development participated in the study. The participants were 72% male and 28% female. The organizations represented were 59% manufacturing, 39% service sectors, and 1% not-for-profit. The size of the companies ranged from 50 to 5,000 employees. The average number of years of managerial experience was 10.7.

Measures. The author designed a brief survey with three measures to measure students's reaction to the IFS. One measure (3 items) assessed whether the IFS helped students know if they comprehended the seminar material. Examples of items include "The IFS helped me find out how much I knew about the seminar material before the instructor presented the material, and the IFS helped me determine whether I understood the seminar content the instructor presented." The second measure consisting of three items assessed whether students' felt the IFS added value to their learning experience in the seminars. Examples of items include "The IFS significantly added value to my learning experience, and I would like to see all seminars use an IFS." The third measure (3 items) assessed the instructor's selection and delivery of the seminar material. Examples of items include "The IFS helped the instructor make appropriate adjustments in delivering seminar material, and the IFS helped the instructor effectively determine whether the seminar content was relevant to the students." A five-point Likert response scale ranging from (1) Strongly Disagree to (5) Strongly Agree was used.

Three open-ended questions were used to gather comments about students' perceptions of using an IFS as a teaching method. The following questions were used: (1) "What did you like about the IFS?" (2) "What did you dislike about the IFS?" (3) "What are your concerns about using an IFS in seminars?"

Procedure. The IFS was used in eight different management development seminars. Each seminar had approximately 25 students. Students' comprehension of the seminar topic was assesses using a combination of twenty multiple and true-false questions at the beginning of the seminar. During the seminar the instructor projected four to five quiz questions every hour and half during a six hour seminar. Quiz questions tested knowledge comprehension of mini-lecturettes and assessed whether participants could apply seminar content to case situations. Students responded to all questions in less one minute. The instructor and the students then discussed the aggregate results. In situations where comprehension was below 90%, the instructor presented material again and retested comprehension again until a 90% comprehension level was attained. In re-test situations the instructor conveyed that the objective was to communicate the content clearly until students had an overall 90% comprehension level.

At the end of the seminar, participants were asked to evaluate the use of the IFS by responding to the survey items described above under measures. Survey items were presented on the overhead project screen. The aggregate results of their evaluations were not shared with them until they had answered all of the evaluation questions. This was done to prevent aggregate data from biasing individual responses.

Results

The majority of students (65% strongly agree, 27% agree, 8% neutral) reported that the IFS system helped them know their comprehension level of the seminar material. Most of the students (62% strongly agree, 25% agree, 13% neutral,) indicated that the IFS added value to their learning experience. Many of the students (60% strongly agree, 24% agree, 16% neutral) recommended that an IFS should be used in future seminars. Students (40% strongly agree, 38% agree, 20% neutral, 2% disagree) indicated that the IFS helped the instructor adjusted the selection and delivery of seminar material.

Students' written comments to the three open-ended questions were analyzed by a research assistant after the seminar. The main focus of the analysis was to note the frequency of specific similar comments. Three main comments were observed in response to the open-ended question "What did you like about the IFS?" The IFS was a non-threatening way to find out how much I and other students understood the seminar material and the instructor. The feedback was immediate and we (students) could see the results on the screen. The IFS approach puts emphasis on making sure the we understand the seminar material. The main comments to the question "What did you dislike about the IFS?" had to do with difficulty students had reading the print on the overhead projector and that the seminar instruction was slowed down by using the IFS. A couple of the comments suggested that too much emphasis was placed on trying to make sure all students comprehended the material. The common responses to the last question "What are your concerns about using an IFS in seminars?" are as follows. Not all instructors may be able to use this approach (IFS) because they may feel threatened by immediate feedback indicating that students did not understand the instructor's presentation. The IFS may not be appropriate for students who cannot read fast. The frequency of quiz questions using the IFS seems to be more appropriate for technical based seminars than people management seminars.

Discussion

Based on the results it appears that (1) the majority of students felt that the IFS added value or quality to their learning experience, and (2) the IFS is an effective non-threatening way to assess students' knowledge and comprehension of seminar material. The IFS as a teaching delivery method appears to be especially important with students (adult learners) taking non-credit continuing education seminars because there usually is no assessment of knowledge comprehension. Adult learners do not like taking exams. However, the adult learners in this study were not bothered by responding to comprehension quizzes. It appears that the IFS did not stimulate feelings of anxiety.

The IFS also helped to involve all of the students in the seminar, a task which is sometimes difficult in seminars of 25-35 people. Traditional methods of teaching do not permit full participation. Sometimes a few highly verbal students may dominate discussion in seminars. Sometimes quiet and reserved students may go through an entire seminar without interacting with the instructor or contributing to large group discussion. As a teaching delivery method the IFS is an effective non-threatening manner to increase students' attention and participation in the seminar.

As a result of using the IFS the author learned more about the link between his delivery of seminar content and students' comprehension. Without the immediate feedback in the seminar, the instructor may have missed receiving invaluable information regarding areas that students did not comprehend. In the past the instructor encounter silence after asking students if they had any questions regarding the material he just presented. However, because the IFS conducts anonymous assessments students receive immediate feedback regarding their comprehension of the instructor's presentation. The major goal of the instructor is to help all students gain their highest possible level of comprehension.

Any results of this study need to be interpreted with caution. It was intended to be a simple exploratory study, therefore, the research design is not rigorous. Although over 200 non-credit continuing education students participated in the study, no generalizations from this study can be made to students taking traditional credit courses. In addition, only one instructor was used to test the IFS, therefore, it is not possible to generalize to other instructors and their students' reactions to the IFS.

Future research should address the following areas. A quasi-experimental study using two groups of adult learners taking non-credit continuing education seminars should be conducted. Comparing students using and IFS versus students with no IFS would help determine whether there is a significant difference in students comprehension of seminar material. A second quasi-experimental study should be conducted with instructors and students in traditional credit courses. A third study could investigate if students's reactions to using the IFS is different when their individual responses are known to the instructor versus remaining anonymous. It is possible to record each individual answers to quiz questions by assigning response pads to students. Finally a study should be conducted to determine the extent to which the IFS is effective in surveying students regarding sensitive questions such as sexual harassment. Classroom discussion of sensitive issues may increase as a results of students giving anonymous responses and then seeing aggregate results presented on an overhead screen.

To conclude, the author will continue to use an immediate feedback system in teaching because students find value in using the system. If students are truly customers of the teaching process, and improving students' proficiency is a major goal, then it is imperative to continue investigating new methods of assessment and evaluation. The author encourages other instructors to consider using an IFS in teaching students.

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Instructional Use of Compressed Video Distance Teaching: A Responsive Evaluation

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Interest in distance teaching is due to the appeal that it has to a very broad based constituency. In 1991 a southwestern university established a network to deliver distance education classes. Although satisfying the intent of instructor managed telecommunications classes, there was a critical shortage in support services for faculty. This study, designed as a responsive evaluation, identifies faculty support, training and administrative issues that must be addressed in managing this type of instructional delivery.

The current enormous interest in distance education is due in large measure to the appeal that it has to a very broad based constituency. It seems to have something to offer to almost everybody. (Garrison, 1990) Distance Education is in fact, a phenomenon whose time has come. In an elementary sense, distance education concerns learners that "happen to be separated" from the instructor. In all types of instruction, education must experience the interactive communication between student and teacher; distance education allows this to happen. In the early years of distance education, however two way interaction was not the standard.

Distance Education in the United States is generally recognized to have begun in the mid 1850s and inspired by Reverend W. Sewell of Exeter College, Oxford. Reverend Sewell suggested off-campus study through a system of lecturers. American James Stuart, in 1871, proposed a traveling circuit of lecturing professors who later became the University Extension System at the University of Cambridge (Brittner, 1933).

In 1873, Anna Eliot Ticknor established a correspondence school for women out of her home in Boston. The "American Society to Encourage Studies at Home", enrolled more than 7,000 women in its university-level correspondence courses over a period of 24 years (Brittner, 1933). This was the first formalized distance education program for women in this country.

With the success of Ticknor's school in Boston, correspondence study caught on in the late 1800s, and was offered by universities in Pennsylvania, New York, Illinois, and Wisconsin. Penn State and the University of Wisconsin were among the first to offer courses in the United States through extension divisions using correspondence study (Williams, 1994).

Although the subject of much research through the years, it was not until 1972 that the term "distance education" was first used to describe the distinct field of discipline formulated by the family of educational practices that had sprung up around correspondence education. Initially limited to the technologies made possible by the mail system, "correspondence study" adapted to other technologies, especially those from the field of electronics, and today includes audio, video, computing, and satellite (Williams, 1994). You can indulge in distance learning by reading books, but if you indulge in distance education you are necessarily involved in a two-way communication process. There must be a feedback mechanism for education to happen (Perry, 1986).

Distance education responds to opportunities that either depend on or are more powerfully realized with electronic delivery. Telecommunications based education needs to be conceptualized and perceived as an extension of the parent organization's mission. Therefore, teaching is then re-conceptualized and a new perspective is brought to the content and delivery of education, the needs of the individual learners and undeserved constituencies, and the parent organization's mission and competitive position (Duning, 1993).

Faculty involvement into distance education does not happen over night. In fact the mere introduction of distance education causes most faculty to shudder at the thought of such a change. The literature on change recognizes the tendencies of individuals, groups, organizations, and entire societies to act so as to ward off change. Change, however is a process or series of events

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occurring over a period of time, usually involving a more or less orderly and somewhat predictable sequence of interactions (Klein, 1985).

Allan Knox's (1986) research supports the need for faculty development programs in the field of adult education. In his findings, Knox reports that although adult educators generally are experts in the content they teach, often they are not adequately prepared for the challenges of helping adults learn in both traditional and non-traditional learning environments. Therefore, from time to time, adult educators need advise about the problems and challenges of teaching. These findings are especially relevant in today's high tech virtual teaching environments where teachers and students meet electronically via phone lines and satellite transponders(Williams, 1994).

The Trans-Texas Videoconference Network

Prompted by the expansion of The Texas A&M University System (TAMUS) from four universities to eight, Texas A&M University began working in 1989 with GTE Southwest to assess the feasibility of implementing a state-wide high-speed data and videoconferencing network. Consolidation of costly leased data links and connection of computing resources at the far system parts became a high priority for the uniform management and exchange of information in both the administrative and research sectors. Digital two-way interactive videoconferencing service provides a convenient avenue for meetings and classes with signals which travel simultaneously on the same telecommunications links as computer data (Staff, 1991).

Construction of the TAMUS Interactive Services Data Network began in early 1990 with funding authorized by the presidents of the system universities which include Prairie View A&M University, Tarleton State University (Stephenville), Texas A&M International University (Laredo), Texas A&M University-Corpus Christi, Texas A&M University at Galveston, Texas A&M University-Kingsville, Texas A&M University (College Station), and West Texas A&M University (Canyon). Moreover the directors of the agencies collaborated which included the Texas Agricultural Extension Service, the Texas Agricultural Experiment Station, the Texas Engineering Extension Service, the Texas Engineering Experiment Station, The Texas Veterinary Medical Diagnostic Laboratory, the Texas Transportation Institute, and the Texas Forest Service.

In the third quarter of 1990, VideoTelecom Corporation (VTEL) of Austin, Texas, was selected to provide videoconferencing systems. VTEL systems incorporated an array of features important for the support of teaching and meetings.

For transmission of videoconference signals plus data between university computing centers, a system of land-based T-1 telecommunications links were leased through GTE Southwest and ATC Telecommunications. T-1 lines are essentially high-capacity, high-quality telephone circuits which provide cost effective 24-hour service. T-1 telecommunications utilizes a combination of fiber-optic, microwave, and standard telephone technology to provide a 1.544mbps bandwidth which accommodates the 768kbps videoconference data stream and a variety of data channels for computing services.

Therefore, TAMUS became Texas' first institution of higher education to implement a major digital videoconference network in the spring of 1991. The Trans-Texas Videoconference Network (TTVN) is currently the nation's largest university-operated two-way interactive digital video communications network.

The TTVN continues to be Texas' fastest growing academic videoconference network. During the fiscal year ending August 1994, the network carried 2,543 videoconferences and 74 telecourses which totaled over 6,126 hours. These 74 telecourses included 16 different areas of curriculum, which involved virtually all TAMUS institutions (Staff, 1991). Twelve new videoconference facilities were added during this fiscal year bringing the total to 36 encompassing 17 Texas cities and towns. Many of these installations are attempting to meet the increasing demands of distance education activities. Several TAMUS campuses have installed second videoconference systems to accommodate extensive telecourse schedules.

This network was established to provide instructor-operated, high quality educational telecommunications. VTEL equipment is designed to be operated by the instructor without the need of an on-site technician. All of our professors operate all phases of the in-class equipment. There is however a systems operator for the overall maintenance and management of the network. Our 36-site system has a technical staff of three individuals. In most cases, professors are alone in the classroom to operate the cameras, VCRs, multimedia presentations, and the overall classroom management.

Methodology

Although satisfying the intent of the administration for providing instructor managed educational telecommunications classes, it became apparent to this researcher, after using this network for three years, that there was a critical shortage in support for faculty and students exposed to this system. In December of 1993, the author approached the Associate Vice Chancellor for Information Resources of The Texas A&M University System about the critical need to examine the support services available and potentially recommend additional services to support faculty and students in instructional delivery. The following study was authorized and begun in January 1993.

This study was designed as a responsive evaluation of distance education on the network campuses. The distinguishing characteristic of responsive evaluations is its focus on the concerns and issues of the persons who have a stake in the evaluation (Borg, 1983). There are four major phases that occur in this type of evaluation.

The first phase involves initiating and organizing the study. This phase also identifies the stakeholders who would have an input into the process. One must also identify the political and other factors that would possibly influence the outcome. These factors were identified by a series of interviews by team members and the stakeholders on each campus.

The second phase is to identify the concerns, issues, and values of the respondents. These issues were identified by a series of interviews and questionnaires administered to a sample of the stakeholders on each campus. These issues and concerns expressed some underlying values of the stakeholders.

The third phase of a responsive evaluation is to gather information that pertains to the concerns, issues and values identified by the stakeholders. The researcher should also collect descriptive information about the entity being evaluated and about the standards that will be used in making judgments concerning the entity. In this particular step, the researcher collected information relative to each campus and used thick descriptors to tell the story.

The final phase of a responsive evaluation is to prepare reports of results and recommendations. It is important to realize that unlike other positivist research, responsive evaluators do not specify a research design at the outset of their work. Instead, responsive evaluators use emergent designs, meaning that the design of the research changes as the evaluator gains new insights into the concerns and issues of the stakeholders (Borg, 1983).

Research Questions The research questions listed below were developed to frame the study.

1. What support services are required to assist instructors and students in distance education courses?
2. What training programs should be in place to support educational use of the network?
3. What are the administrative issues, such as scheduling, residency, registration and so on that should be clarified?

The faculty were asked to respond to the above research questions from three frames of reference: faculty, students, and technology. Therefore, the discussion of the issues will also follow this pattern with the results framed around the research questions.

Discussion of Issues

Faculty Distributing handouts to the classes continues to be a major concern. Planning two weeks ahead is a problem when one term the class is on weekends and the next term it on one evening. So far, neither fax, nor mail, nor messenger have been totally reliable.

There needs to be someone at the remote site who knows, and can troubleshoot the equipment as well as operating the cameras. (Technical proficiency with the equipment should

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not be required of students or faculty.) This person, not the students, should also be able to answer questions about scheduling, be responsible for distributing paperwork from the professor, and for collecting assignments from students and sending them to the professor, etc.

An important concern of the faculty at a small regional campus was the different campus calendars. If the network is to grow and be successful, it is necessary for all the involved sites to adopt the same calendar. (To recognize the magnitude of the problem, consider two sites that start the spring semester on different days, end on different days, and have spring break at different times. One could have a potential four week mismatch.)

Other faculty concerns dealt with flexibility of room arrangements, access to the Internet in the room, and a computer included in the room for use in multimedia presentations. Also the television monitors in the rooms should be at least 35". In some cases the size of the monitor makes it impossible for the instructor to preview the textual and graphic material before sending it because the professor cannot see it from the location of the podium. (This may also speak to room arrangement)

Especially in graduate classes or other adult education situations, it is important not to be "tied" to the podium during class. It would be helpful to have a wireless lavaliere microphone for the instructor and better sound equipment at the remote sites as well.

There needs to be some way to alleviate the problem of access to the instructor for written questions. The fax machines in the rooms should be high quality ones. This was especially a problem with courses in engineering and mathematics where the degradation of the printout caused by poor quality rendered the output unreadable.

Should the courses on the network be limited in size? What size? Another concern of the professors is the question of the number of sites at any one time. This also introduces the question of the minimum and maximum number of students at a given site. Should one teach a class with only one remote student? Another concern is the factor of faculty load. Currently a network class does not count any more than a traditional class, however the preparation and management of the class during the semester is much more time consuming.

A concern of graduate faculty members is the availability of video conference rooms after hours and on weekends. This is due in part to the schedule of some graduate classes to a weekend format where the rooms need to be available on Saturdays and some Sundays. Moreover, on some campuses there are not dedicated videoconference classrooms and, in some instances, videoconference activities do not take precedence over other scheduled activities in the same room. This causes problems when trying to schedule activities with multiple sites and finding the teleconference room booked for a different event.

Since the sites, in multiple site transmissions, are voice controlled, the professor has no control over which site is on the screen and cannot control the movable cameras at the distant sites. This is another situation where a technical support person is needed at the remote site to operate the equipment.

Somehow the system needs to be improved so that chalkboard/whiteboard can be used by the teacher. This becomes critical when courses like engineering math are taught where very complex problems that usually take the entire board are to be displayed. A teacher just cannot adequately display these problems using display cameras. An additional camera with an operator would go a long way toward addressing this problem.

A simple system is needed for assisting the faculty in sending and receiving papers from the distant students. Here again the need for an operator is necessary.

Registration policies need also to be addressed. The current system allows for distant students to register for classes in one of three ways: through the send site institution as a resident student, through the distant site institution as a resident student of that institution, or for continuing education credit from either institution. The problem is that in at least two of the three options listed above, the instructor has no way of knowing how many, if any, students are expected. This is very frustrating for the instructor if one distant site is selected and there is no way to estimate how many individuals to expect. Another consideration is how many individuals at a distant site constitute a class. If an instructor has a full class at the local site and only one student at a remote site, what is the incentive to the local site to utilize distant education technology? Moreover, it takes a tremendous amount of additional preparation before, during and after each class to teach at a distance. Where do we reach the break-even point in dollars or quality?

Another key question was faculty load. Currently, if a professor had two sections of a class with each class having at least 10 undergraduate students and the class was taught on the local campus, the instructor would receive credit for two sections. However, under the current policy, if the same scenario were to include one of the classes local and one of the classes remote, the instructor would receive credit for the only one local class although the preparation is almost equivalent to two sections. We must build these distant classes into the calculation for workload. Moreover, if that remote site is constituted of 10 students and only three are registered for credit with the host institution and the rest are receiving other types of credit, we should still grant the credit for the class as a part of the faculty load. It should make no difference where the credit is being counted; the same amount of effort and preparation is still required of the professor.

Residency credit for doctoral degrees is also a concern. As current policy allows all distant classes to be shown on transcripts as resident credit classes, it is possible for an individual to satisfy all residency requirements without ever stepping foot on campus. We should find a way to distinguish between resident credit courses and courses taught at a distance.

Additional budget allocations should be made to departments that are to teach on the network. These additional funds could be used for photocopying, postage and fax costs needed to send materials, books, reference resources, etc. to remote students. These funds could also be used to support some travel necessary for the class.

There should be some time available, when necessary for on-line office hours for the professor to be able to interact with the students outside of a classroom setting. There were several solutions suggested such as The Texas Education Agency's computer network (TENET). This is a system similar to Compuserve or Prodigy. The annual registration fee for university students is $25 which would allow, with local number access, to have unlimited access to the Internet, and therefore access to the instructor for on-line conferencing.

Faculty Views of Students using the Compressed Video Network A highest priority was providing adequate, timely assistance when technical problems arise during class, so as not to disrupt class. This again calls for the need of a skilled technician to operate the cameras and be available when technical problems occur, as they do.

Another popular request was for dedicated rooms at each of the sites for the sole purpose of distance education classes. Because space is such a prime commodity on all campuses, network rooms are also used for other purposes. This causes a real problem in the lack of flexibility of room arrangements as well as the use of the rooms.

There should be a time at the beginning of each semester to provide a hands-on orientation to the distance learning classroom, and technologies. With some classes, taking this time during a class is not possible due to the time necessary to present class material. A training session for the students could be offered that would include a handbook/manual that can be referred to later.

Synchronized scheduling of semester and holidays is a must. With different beginning and ending dates as well as different holidays, the students become frustrated and sometimes unable to take vacations with family members. This only distracts from the learning that should be taking place.

The opportunity to give feedback to the faculty at times other than class time is necessary. And, along with this, the availability to have Internet access and computer availability in the classroom is a must.

As far as the environment of the classroom is concerned, network rooms should allow the total number of the people in the room to be seen at one time and not by pulling the camera back so far that no one is recognizable. This may require a policy to limit the enrollment of distance education classes. Also a lavaliere microphone and a remote control mouse for portable computers for multimedia presentations are necessary. It is suggested that all equipment be thoroughly tested prior to the beginning of each semester to head off any potential problems later.

Class facilitators should be used for the duration of each class, and these should not be registered students in the class. Class facilitators should be trained in advance to fax materials, distribute handouts at the proper time, and honor other requests made by the instructor. Also: arrange the room, operate cameras, and other equipment. At some sites, the fax and duplicating equipment may not be located in the same area as the distance education classroom.

Faculty must be trained for teaching on the system, and this does not mean a one to two hour lecturer/workshop. There needs to be faculty support provided in instructional design and curriculum development. If faculty are to use this new technology, they must be educated to take full advantage of its capabilities. It is no longer possible to use the same curriculum design of a traditional class and force it into an educational telecommunications setting.

It is important that network-wide e-mail protocols be made available to all faculty and students using this technology to ensure contact with professors is maintained. It is also suggested that an orientation to distance learning be taken by all students prior to other courseware taken on this media.

Technology/Administration/Library It is important that a practice room be provided for each campus where instructors can rehearse their classes.

There should be some way for the administration to bring together faculty who have taught on the network on a regular basis (each semester?) to dialogue with other faculty who are also teaching on the network. Topics could include: *What are some of the more creative strategies teachers have used to teach material? How do these strategies vary depending upon the nature of the course and the level it is being taught? How do teachers use pop quizzes? How are library resources used? Do you require a massive literature review for your doctoral students at a distance, if so, how is it assigned?*

How are faculty selected and evaluated for teaching distance education classes? Should a standard evaluation instrument to evaluate course expertise and professor performance be adopted? Why do faculty participate in telecourse teaching? Is this participation volunteerism or coercion? Is there release time granted to prepare courses for this type of delivery? Moreover, instructors should be given some kind of extra incentive for teaching on the network. Additionally, research should be conducted on teaching with electronic telecommunications. As this is an emerging field, empirical data would assist administration in planning decisions.

Another question was what should be taught on the network. Obviously not all courses should be adapted to this technology, although all could. In the early stages of transition, some are more easily adapted. Who decides? What are the criteria?

The issue of scheduling of the network was again a concern. The current policy calls for individuals to call the network office to check if the network is available. The next step is to call each individual site and check on room availability. Once the rooms are secure, one must then call the network office again and reserve the network. A computerized system could easily be established whereby one call to the network system operator could do it all. If each site would give priority to the network, and each site was connected by data, the staff of the network could check availability on a common computer and book all sites and the network at the same time. There is no excuse for the individual (usually the instructor) who is scheduling the meeting to have to go through three or four steps to schedule the network and rooms.

It was suggested again that each class booked for the network also have a set time each week for electronic office hours for the professor. As the popularity for distance education classes begin to grow more and more, and the demand for the system continues to escalate, there may need to be a decision made as to whether the system is for instruction or administration. If indeed there is a need for instruction, then we must dedicate a part of the system to instruction, even if that means bumping some other scheduled meetings off the network.

Library and other support materials are needed for graduate classes taught over the system. In some more remote sites, a cadre of students usually travel to larger metropolitan cities to use the libraries on the campuses there. This becomes problematic when large distances separate distant classes from library facilities.

A solution is to have the library available to remote students. (This is an issue that should be addressed by library automation committees.) However, libraries tend to only loan to other libraries, or to individuals who are able to go the location of the lending library. Cooperation between libraries, and between the professor and remote library are essential.

Journal articles are especially important for graduate students who are doing research. Every time an article is copied for loan, it costs money (a loan in this case is really the purchase of one article at a time). Subscribing is not only an immediate cost but an ongoing cost; usually backfiles are also needed. And what is one year of a journal? One journal for a social work program will cost $500 for a few years of microfilm backfiles, plus $95 for the year's subscription. Once the subscription is ordered, it usually will not be in place for the students for at least six months at the earliest and then it will be only one issue at a time.

A document delivery system called Uncover will provide one copy of an article at $15 per article on the average. Moreover, Ariel is also available where one can get five copies as part of the initial fee. These services are not cheap, especially when you consider having to pay these costs just to look at the article and find out if it will truly be useful. It seems that the university receiving the tuition should handle the costs.

Northern Arizona University offers a service to their distant students that is the same as service for local students. They provide an 800 telephone number, fax number and Internet address for students to reach them. A list of citations and abstracts from data bases such as ERIC are provided at no cost. Articles may be requested by providing a citation or by requesting articles on a specific subject. One dollar per article is charged for photocopying of articles up to twenty-five pages in length. Students may also request specific book titles or ask for books on particular subjects. Library cards are sent to the student when books are checked out for the first time. All these materials are sent out usually the same day by Federal Express.

Library collections are a real concern if no major library loan program is instituted. Most library collections are developed by the university's faculty to support local curricula. One of the reasons for importing a course is because it is not part of the local curricula. Thus, there are usually no library materials available to support a remote course.

Conclusions

In this section, the conclusions will be centered around the original four research questions. In the discussion above, several of the recommendations were mentioned by more than one group, although they will only be mentioned once here.

Question #1: What support services are required to assist instructors and students in distance education courses?

- There should be someone at the remote site(s) who knows, and can troubleshoot the equipment, as well as operate the cameras. This person should also be responsible for collecting assignments and other duties as assigned by the instructor.

- All electronic classrooms should have access to Internet and have a computer in the room that can be used for multimedia presentations. These computers should be compatible with either Macintosh or PC based disks.

- There should be some time available on the network, when necessary, for on-line office hours for the professor to be able to interact with students outside of the scheduled class time. Students should have the opportunity to give feedback to the faculty at times other than class time and without the necessity of a long distance telephone call. (i.e. TENET)

- It is important that system-wide e-mail be made available to all faculty and students to ensure contact with professors is maintained.

- Class facilitators should be available for the duration of each class, and these should not be registered as students. Work study students could be hired for this purpose from the additional funds recommended to be allocated to Departments teaching through educational telecommunications.

- A computerized system should be established whereby one call could schedule a meeting/class on the network, reserve rooms at all sites, and coordinate times for the meetings.

- Library and other support materials need for classes should be provided by the host site. This could include an 800 telephone number, fax and Internet address for students. Moreover, students should be able to access all items in the library just as if they were local students.

Question #2: What training programs should be in place to support educational use of the network?

- There should be a time at the beginning of each semester to provide students a hands-on orientation to the distance education classroom and technologies.
- A training session for the students should be initiated that would include a handbook/manual that can be referred to later.
- An additional network room should be provided for each campus where instructors can practice without tying up the system.
- The administration should bring together faculty who have taught on the system regularly to dialogue with other faculty who are currently teaching distance education classes.
- A standard evaluation instrument needs to be used to evaluate course expertise and professor performance. This instrument should be different from the one used in traditional classrooms.
- Faculty need to be trained and this does not mean how to turn on the equipment, but to utilize the advantages of the system.
- Administration should provide faculty access to curriculum specialists who can take the faculty's syllabi and provide assistance in instructional design. Most faculty are using the same instructional design for the distance education class as they are for their traditional class.

Question #3: What are the administrative issues, such as scheduling, residency, registration and so on that should be clarified?

- There should be an additional allocation from Departmental Operating Funds to departments that have faculty teaching distance education classes as additional expenditures are required over and above what the current formula allows for traditional courses.
- If educational telecommunication delivered courses are to be successful it is necessary for all the involved sites to adopt the same semester calendar.
- All monitors should be at least 35" for adequate viewing by students and professors at the back of the room.
- Each site should have classrooms dedicated to only videoconferencing, or at least have network activities take precedence over all other scheduled activities in the rooms.
- Registration of students at distant sites should be studied. Currently students may register at distant sites for credit at that site. Under this arrangement, the instructor has no way of knowing how many, if any, students to expect until the first day of class
- A target class size should be established. Both minimums and maximums are critical for planning purposes. Where is the break-even point?
- Calculation of faculty load for those teaching distance education classes is a major concern. Individual faculty should receive credit for the total students they are teaching, regardless of where they are registered.

- A policy should be developed to determine a way to distinguish between resident courses taught at a distance and those taught locally. Currently there is no distinction on the transcript; all appear as on-campus resident credit courses.
- The necessity of Internet access and computer availability in the classroom is a must.
- Modification of the classrooms so that the entire student population in the room can be viewed at one time should be considered. (This also addresses the need to class size to be studied.)
- There should be increased hours of availability of the rooms, and more than one room should be made available at each location on the network.
- Professors should be given some extra incentive for teaching distance education classes.
- The administration should study all courses and decide what courses should be taught by distance education.

Implications for Practice

It is critical when taking next steps in the process of managing existing educational telecommunication systems to involve leaders at the highest levels of the parent organization. Faculty must be involved in the governance of these systems, however the introduction of telecommunications-based education should be a collaborative effort. A successful process created team is one that is weighted toward professionals who can best consider the non technical questions that are asked (Duning, 1993). One must place the learners needs ahead of organizational convenience and at the center of planning and decision making.

Currently most organizations create telecommunications-based educational programs in an ad hoc fashion. In the absence of instructional design as a resource for instructional environments, and in particular for educational telecommunications systems, learning packages tend to be created by (1) an AV specialist who translates traditional instruction to fit the medium, (2) an educator who directs the AV specialist to accommodate the instructional style demanded, or (3) a tense fusion of the two (Duning, 1993). Educators working in this ad hoc fashion have been doing something for which they were not hired or trained. Moreover, the organization's incentive system was not devised to reward them for such a task.

The shifting priorities this new paradigm provides uncovers a basic organizational principle of which we are all aware: management problems are rooted in long history of the academy and moving toward change must be incremental to be effective.

This researcher would suggest that most organizations have not adapted their units to accommodate the opportunities and impact of educational telecommunications. Most are still trying to force their traditionally delivered classes into the mold of electronic delivery. In the long run, this will not be effective. It is suggested that each campus establish an academic instructional design unit to assist faculty and instructors in distance education course development.

Instructional design can be a valuable and integral part of the telecommunications-based education (Duning, 1993). A major rationale in support of an instructional program is the current practice of diverting subject matter experts (SME) from instruction to design work which is likely not the best use of valuable resources. A unit such as this would free the SMEs to do their job of teaching.

Regardless of the course taken, teaching faculty should not be expected to be the content specialists, curriculum designers, and the technology specialists. The compressed video equipment on the market today is designed for individual faculty and instructors to operate while teaching. However, in this day of the technologically informed student, we can no longer afford to offer classes that merely place traditionally prepared material on the network. Our instructors can indeed operate all the equipment, however they must have high quality material to deliver. Our clients are requiring a product that rivals what they see coming from business and other commercial markets. As colleges and universities in the future will no longer control all access to knowledge, we will find ourselves competing for students with other entities such as the telecommunications and entertainment industries. Education, therefore must embrace this new paradigm or be left behind.

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Team-Teaching in Graduate Level HRD: Participant's Attitudes and Perceptions

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This study investigated team teaching a graduate HRD course and whether team teaching supports andragogy and faculty collaboration and socialization. Qualitative and quantitative data were collected from participants in a graduate HRD course. Findings suggest that team teaching supports andragogy, faculty collaboration, and socialization.

Team-teaching involves two or more instructors collaborating over the design and/or implementation and evaluation of the same course or courses (Easterby-Smith and Olve, 1984). Research related to team-teaching in higher education has generally been limited to undergraduate survey courses such as psychology and management education courses (Easterby-Smith and Olve, 1984). However, extensive research literature on the systematic evaluation and assessment of the "...outcomes of faculty collaboration in teaching does not exist " (Austin & Baldwin, 1991, p.41).

The formal knowledge base of learning and instruction in human resource development (HRD) in the twentieth century in the United States is built, in part, upon the humanistic learning construct of andragogy (Knowles, 1980, 1984). One of the tenets of andragogy is that adults are "life-centered" in their orientation to learning, and self-directed in their need to learn (Knowles, 1984; Long, 1991). Therefore, effective instructors in HRD programs in higher education should seek a style of instruction that reflects an "andragogical" model of instruction, facilitation, and self-directed learning (Brookfield, 1986; Knowles, 1984; Peters and Jarvis, 1991).

Teachers of adults have two primary roles: content specialists and/or facilitators of learning (Caffarella, 1988; Knowles, 1975, 1980). Peters and Jarvis (1991) point out that the lack of attention in adult learning literature to strategies which address the discrepancy between the teacher's conception of his or her role and the expectations of learners. It might be expected that collaborative relationships between teachers and learners in a team-teaching situation would be influenced by the teachers' view of his/her role and the expectations and attitudes of learners.

Faculty collaboration and socialization contribute to learning, collegiality, and teaching effectiveness (Austin, 1990; Austin & Baldwin, 1991; Mezirow, 1991). The role of socialization in assimilating newcomers into a new organization or occupation is widely accepted; what is needed is inquiry that addresses the collaborative process that occurs during socialization.

A study of an HRD course utilizing a team-teaching approach to instruction can shed light on the extent to which this instructional methodology supports faculty collaboration and socialization and how it supports an andragogical model of instruction. Research is needed on participants's attitudes and perceptions of team-teaching in a graduate HRD course in order to analyze faculty collaboration and socialization, and whether and how team-teaching supports andragogy.

Theoretical Perspective

The theoretical framework for this study was based on humanistic learning theories of andragogy and the work of Knowles (1980, 1984), and the self-directed learning studies of Knowles (1975, 1980), and Long (1991). According to Peters and Jarvis (1991), the relationship between teachers and adult learners has political, philosophical, and psychological dimensions. They contend that the political dimension of power, both in a structural and procedural sense, should be distributed

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between teacher and learner and among learners. It follows that this distribution will be even more complex if the power is shared between two or more teachers. In addition, the philosophical issues would be expected to be more complex with two teachers, especially if their philosophical viewpoints differ. The psychological dimension, as described by Knowles (1984), refers to the attitudes and actions which created what he described as an appropriate psychological climate for learning, i.e. one that is characterized by mutual respect, collaboration, mutual trust, supportiveness, openness, authenticity, and humanness. Again, the establishment of such a climate seems to become more complex with the addition of more than one teacher.

Andragogy has been variously interpreted as a "humanistic theoretical framework applied primarily to adult education (Elias and Merriam, 1980, p. 131), and a concept from which a set of adult teaching behaviors can be derived (Brookfield, 1986). Brockett and Hiemstra (1991) suggested an instructional model that relies on a facilitating resource or "educational agent" (p.13) working with learners who assume responsibility for their own learning in a supportive social environment. The social and methodological context in which the learning takes place is critical in establishing a theoretical construct for andragogy. The problem is to operationalize and then describe the interaction between the learner and the context. This study used qualitative analysis of participant interaction to achieve these goals.

The social context in which collaborative relationships were negotiated in this study is a critical dimension of the process of team-teaching. The theory of negotiated order characterizes collaboration as the result of self-conscious interaction of negotiation and re-negotiation among participants (Gray, 1989; Goffman, 1983). Negotiated order is based on social interaction between participants who are negotiating and re-negotiating their relationships.

The influence of collaborative relationships, gender, and status on HRD instruction have received minimal research attention. The work of Easterby-Smith and Olve, (1984) indicated that faculty collaboration influences higher education instructional results. Gender issues in this study were based, in part, on the work of Cameron and Blackburn, (1981), and status issues were based on research by Fennel and Sandefur, (1983).

Feldman, (1976) and VanMaanen, (1975) have been credited with organizing much of the theoretical groundwork in organizational and occupational socialization. Their research lays the theoretical foundation for the socialization-related constructs in this study.

Purpose of the Study

The purpose of the study was to answer several questions related to participant's perceptions and attitudes toward a team-teaching methodology in a graduate HRD course. The study focused on the following research questions: (a) is experience and personality compatibility of instructors an issue in a course utilizing team-teaching methods ? (b) what are concerns and special issues in team-teaching a graduate level HRD course ? (c) does team-teaching a graduate HRD course support the concept of andragogy ? (d) how does team-teaching affect faculty planning, implementation, and evaluation strategies ? (e) does team-teaching contribute to faculty collaboration and socialization of new faculty ? and (f) how do faculty gender and subordination issues affect team-teaching an HRD graduate course ?

Several methodological questions were queried to support the research questions and purpose of the study. They included (a) what are learners [and faculty] opinions about team-teaching versus more traditional methods of instruction in an HRD graduate course ? (b) how do learners in an HRD graduate course define team-teaching, and what skills, knowledge and attitudes do they believe teamed instructors need to be successful ? (c) what are advantages and disadvantages of team-teaching versus traditional teaching methods ? and (d) are there significant differences in learners' perceptions of andragogy in team-teaching and their attitudes toward team-teaching in an HRD graduate course as measured by a survey instrument ?

Research Methods

Study Participants. Participant learners were 16 graduate students enrolled in Special Topics in Human Resource Development, a graduate course in the Department of Vocational and Adult Education (VAED), the University of Arkansas. The decision to use this sample is consistent with Patton's (1990) theoretical and criteria-based sampling techniques. This satisfied theoretical sampling (andragogy, collaboration, and socialization) and criteria sampling (higher education HRD students in a team-teaching situation) necessary for the successful completion of the study. The two instructors were a new faculty member and the department head. Both faculty instructors were participant observers and the non-participant observer was a graduate assistant from the same department.

Research Design. The multiple case study (learners and faculty), descriptive research design used mixed methods and methods triangulation. Multiple case study techniques included structured and unstructured in-depth interviews and observations by participant and a non-participant observer as well as the collection of relevant documents. In addition to qualitative techniques, a survey instrument was used to collect quantitative data.

Sixteen standardized open-ended interviews were scheduled at the University of Arkansas graduate education facilities. Interviewers were both faculty participant-observers and non-participant observer to assure trustworthiness of data. Each one hour interview was audio-tape recorded for data collection and analysis purposes.

Observations were performed by both instructors during each class period. Additional observations were done by a graduate student in order to balance possible observer bias on the part of the instructors. Post-observation debriefing sessions were held after each observation.

All course participants were asked to complete a survey instrument, a 47 item, modified version of the *Principles of Adult Learning Scale* (PALS) instrument, devised by Conti (1978), measuring the extent that instructors adhere to an andragogical model of instruction. Validity and reliability were established for the PALS instrument by Conti (1978, 1979, 1983). Participants were asked to provide demographic data such as age, gender, coursework status, university classification, and information concerning their extent of involvement in higher education.

Prolonged engagement (approximately four months), persistent engagement (methodological, observer, and data triangulation), member checks (post-class debriefing sessions), and peer debriefing (multiple researcher debriefing sessions) were used to ensure data trustworthiness as suggested by Lincoln & Guba (1985). Data triangulation was achieved through comparing and cross-checking the consistency of data obtained.

Procedures and Data Analysis. The qualitative portion of the study required that interviews be analyzed both *in situ* as suggested by Lofland and Lofland (1984), and during post-interview and post-class debriefings (Spradley, 1980, Strauss & Corbin, 1990). Additionally, participant-observers discussed and analyzed interview responses in on-going dialogues held throughout the research to qualify and attempt to support theory. Data was triangulated during each debriefing session and upon completion of the quantitative analysis. Qualitative software was used to support qualitative data analysis. Descriptive statistics were used to analyze quantitative data from the survey instrument.

Findings

The NUDIST (Replee Pty Ltd., 1993) software program was used to code and examine interview debriefing, non-participant observation, and participant documentation. Survey data including demographic variables were analyzed by a quantitative data analysis software program. Quantitative data analysis was used [primarily] to enable confirmation and corroboration of qualitative data (Miles & Huberman, 1994). The following is an analysis of data collected from learners, faculty, and non-participant observer participants.

Learner Perceptions. Learner perceptions were classified according to the study's research and methodological questions. All references to respondent quotes in this study are coded for anonymity. Learners' perceptions of team-teaching were generally positive. Learners reported that they were "interested" in different instructional methods, "comfortable" with the concept of team-teaching, and felt that it was "appropriate" for graduate level work" (sk-12).

Conversely, several learners were initially "apprehensive", and "a bit wary and skeptical" about the change from traditional methods to team-teaching. Change appeared to be the primary cause of learner anxiety, i.e. they were initially "disappointed, because it was something new - I [they] couldn't go into my [their] past and bring up a positive experience" (lj-102). Some learners were concerned about having to "please" more than one instructor, and wanted to know "who do I [we] answer to, who am I [are we] responsible to". They also had considerable misgivings about how they would be evaluated by two different instructors.

Participants defined team-teaching as more than one instructor responsible for the instruction of the course "to the effect that they both need to be present in some form" (js-63). Several learners emphasized the need for excellent communication, interpersonal, and organizational skills - more than those required in individual teacher-led instruction. Other skills included "compromise", flexibility", and "controlling personalities so they can be equal but not dominate" (ls-70).

Advantages of the team-teaching method included its ability to provide instructors the opportunity to "model team behaviors", and that it seemed to provide a more "informal" and "synergistic" approach to instruction. Most student participants felt that team-teaching provided more feedback from instructor(s) to all participants. Not surprisingly, participants thought that team-teaching allowed for a broader "collection of backgrounds, knowledge, and wisdom" concerning the course content.

Disadvantages to team-teaching included (a) a lack of cohesion "if one of the instructors came across as having more authority than the other" (cl-55), (b) problems if instructors displayed "philosophical" differences, and (c) the issue of "who do I please ?" when there are two instructors. Several participants believed that when instructor's personalities are compatible "it's just going to make things run smoother" (sk-100). Some were resolute concerning personality compatibility and felt that "there must be compatibility" (sk-105).

When asked about instructor's past experiences most learner participants felt that it was beneficial for instructors to bring diverse work experiences to the classroom. Participant-learner responses to problems and issues around team-teaching a graduate level HRD course can be categorized as (a) administrative and (b) topical. Administrative issues included monetary concerns around "justifying the credit hour production" (js-90) and that "team-teaching is not efficient, time wise" (dw-42). Definitions of HRD, assurances that "content reflects current practices" (ce-68), and "it supports the philosophy of HRD" (sk-81) were consistent topical issues identified.

Many learner respondents felt that team-teaching a graduate level course was less problematic than undergraduate instruction since graduate students "don't want to be spoon fed" (cl-64). However, a few learners believed that team-teaching may pose problems for graduate students: "it may be that they don't feel like they're getting the authority they had expected" (sk-118).

Responses such as "it gives the learner more responsibility for learning" (bp-236), and "it definitely allows for self-directed learning - for inquiring" (sk-344), indicated that learner's initial reactions to questions whether team-teaching supported andragogy were affirmative. However, as they began to reflect on this question several learners added that "it depends" on how the learning environment is "structured" and the "philosophy, goals, and objectives of the instructors-especially their philosophies" (js-274), and several participants felt that one strong facilitator of andragogy may influence a more pedagogical instructor.

Differences in learners' perceptions of andragogy in team-teaching and their attitudes toward team-teaching in an HRD graduate course were measured using a questionnaire. All participant learners (N=16) completed the questionnaire for a 100% response rate. The following are key findings of the quantitative data analysis. Numbers in parentheses for the first three items that follow are means from a rating scale of *0=never, 1=almost never, 2=seldom, 3=often, 4=almost always, and 5=always*. Respondents reported that: (a) the learning environment was conducive to learning (4.750), (b) a variety of teaching styles were used (4.125), and (c) dialogue was encouraged in the classroom (4.625). Numbers in parentheses for following items (d) - (i) are means from a rating scale of *0=strongly disagree, 1=slightly disagree, 2=disagree, 3=slightly agree, 4=agree, and*

5=strongly agree. Respondents indicated that: (d) instructors were more facilitators than teachers (3.938), (e) more team taught classes should be offered (3.875), (f) team-teaching is good for HRD (3.75), (g) the course was an outstanding learning experience (3.875), (h) course content helped to support the team-teaching method (3.688), and (i) team-teaching helped to socialize participants more than traditional courses (3.733).

A majority (56%) of respondents had little or no experience as participants in a team taught class. Of the 9 indicating that they had experience in a team taught class most (76%) felt that the overall quality of those classes was above average and that team-teaching made the course better than traditional teaching. Many (37.5%) indicated that they had experienced guest speakers in most of their graduate classes, while half reported experiences with guest speakers in over 10 graduate-level classes. Four (25%) participants responded that they had specific prior experiences with team-teaching such as team teaching integrated courses and having taken graduate and undergraduate team-taught courses. They generally felt that the teaching methods used by team-teachers whom they had experienced did not reflect a "real" team-teaching methodology where each instructor had equal responsibility in the classroom. They felt that team-teaching was beneficial to adult learners and that it not only provided the opportunity for learners to be more self-directed, it "modeled the techniques of team-building used in many business and industrial organizations" (bp-21).

Participants were asked to provide demographic data on the survey questionnaire. Over half (68.75%) of respondents reported being in the 36-55 age group. Most (75%) were female and doctoral students (81.25%). Many (43.75%) had almost completed coursework, while 31.25% were just starting their coursework. Over half (56.25%) of respondents take 2 courses (mean of 2.625) per semester; Half (50%) reported that they attended class 6 hours per week while 5 (31.25%) reported that they spend 10 or more hours per week in class. Over half (56.25%) of participant learners worked in full-time jobs (40 hours per week); A quarter (25%) work 30 hours per week, 12.5% work between 20-25 hours per week, and only one (6.25%) participant reported not working. Average hours of work per week was 32.81 hours.

Average commuting distances (miles/round trip) to attend classes was 63.2 miles with 8 adult learners (50%) commuting over 50 miles and 25% of respondents commuting over 100 miles. Over half (56.25%) of participants were full-time students (9 or more hours per semester). Three-quarters (n=12) identified themselves as "non-traditional students".

To address whether there were significant differences in questionnaire responses based on demographic variables analyses of variance (ANOVA) were computed. Note that sample size limits validity of results. Significant ($p < .05$) results of ANOVAs and subsequent *post hoc* (Sheffes) results indicated that (a) prior to this HRD graduate level course respondents attending 6 or fewer hours of class per week felt that team-teaching would enhance their learning ($F = 4.3226$, $p = .0465$); (b) participants attending classes over 6 hours per week reported that more team taught courses should be offered ($F = 5.3730$, $p = .0361$), (c) those students finishing their graduate coursework felt that learning episodes were planned to take into account their prior experiences ($F = 8.9128$, $p = .0139$); (d) respondents who commute less than 50 miles round trip to attend class reported that issues that related to their concepts of self were avoided in the class ($F = 4.2563$, $p = .0412$); (e) adult learners working less than full-time (40 hours per week) indicated that their likes and dislikes for the team-taught course balanced one another ($F = 5.1290$, $p = .0399$); and (f) female respondents reported that questions concerning the nature of society were encouraged in the team taught class ($F = 5.1345$, $p = .0398$).

Faculty Perceptions and Observations. Faculty participants' perceptions and observations were documented by audio-tape during post-class debriefing sessions. Initial perceptions of team-teaching by faculty were similar to learners; for example, early in the semester an instructor indicated that "I felt somewhat unsure as to how the process would work in regard to 'control', however, since I trusted the team-teaching partner, I felt that we could share control without stepping on one another's egos" (pb-5). The new faculty member reported some anxiety and both instructors agreed that learners "seemed to be picking up the course content faster than other HRD classes" (pa-59).

In-process debriefing analyses revealed that faculty were conscience of the possible bias inherent in participant-observer research: for example, one instructor said, "Are we modeling for

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the sake of research or are we modeling good team-teaching practices cause it works ?" (pa-21,22). Both faculty members indicated that the team-teaching process required them to plan and make team decisions which were "sounder in that they are made with more reflection than I [we] normally would have given them" (pb-32). Although principles were discussed and in many cases implied, neither instructor reported conclusive statements as to whether or not team teaching supported andragogy. During the debriefing sessions issues around planning, implementation, and evaluation were in evidence by statements such as "these sessions help me be sure that my observations and conclusions about what is happening during class don't differ greatly from yours [team-teaching partner]. We can discuss possible problems without feeling that either is placing blame on the other" (pb-62).

Analyses of debriefing data indicated that team-teaching contributed to faculty collaboration and socialization of new faculty. For example, "it became easier and easier to work in a team-teaching situation as the semester went along. In fact, I came to look forward to checking with you [the partner] rather than making arbitrary decisions" (pb-29). New faculty socialization was enhanced through the learner-facilitator relationship and supervisor mentoring affiliation which plays a significant role in professional career development (Ostroff & Kozlowski, 1993) .

Issues concerning faculty gender and subordination were ambiguous. Gender was not consciously discussed during the debriefing sessions and subordination was perceived by instructors as "insignificant". Analysis of data indicated that team-teaching faculty "didn't allow rank or gender to be an issue" (pb-55).

Non-Participant Observer Perceptions. Observation data analysis from observations approximately one-third and two-thirds through the semester indicated that learners and faculty interacted in a positive and "facilitative" manner with lots of "nods, smiles, eye contact, and 'uh-hus' interjected in the class" (npo-32). Learners became more "self-directed" as the class progressed; for example, prior to a class observation "about 20 minutes before the start of class I noticed that the chairs were arranged in a traditional classroom manner - in rows. When I came back at the beginning of class everyone was changing the seats into a circle and talking and carrying on in their groups - with no professors in the room" (npo-66,67). Observations indicated that participants generally treated each facilitator as equal during interaction.

Discussion and Research Implications

Discussion. Results are deductive and sought to discover and support elements of andragogy, and faculty collaboration and socialization in team teaching. Therefore, results should be applied only to the context of the study and may not transfer to different contexts (Lincoln & Guba, 1985). Triangulation of data and subsequent decisions on convergence "enhance the quality and credibility of findings" (Patton, 1990, p.467). The research design and sample size employed in this study prevent generalizability of quantitative analysis results. To address possible bias this study used detailed field notes, "reflections on their [our] own subjectivity", and worked in a team as additional checks on bias as recommended by Bogdan and Biklen (1982, p.42).

This study explored team teaching in a graduate level human resource development course and identified attitudes and perceptions of participants in the team-teaching process. As researchers, the faculty participant-observers were aware of possible learner response bias based on power inequality. This discrepancy was confronted through non-participant observation and utilization of a survey instrument. Qualitative and quantitative analyses provided several insights into team-teaching and its impact on faculty collaboration and socialization. These insights tended to converge on four major themes: (a) perceptions and attitudes, (b) organizational and course content (topical) issues, (c) andragogy and team teaching, and (d) faculty collaboration and socialization. This section describes these themes and their relation.

Perceptions and Attitudes. This study suggests that participants' perceptions and attitudes toward team teaching in graduate level HRD are unstable at best; that is, initial perceptions and attitudes were noticeably affected by organizational issues such as evaluation, and instructor control, authority, and accessibility. Instructor's "philosophy", personalities, and flexibility appeared to have had some affect on participant's attitudes and subsequent acceptance of team teaching as did the extent of application of andragogical principles.

Key results of quantitative analyses indicated that those learners with considerable exposure to higher education had positive attitudes toward team teaching and felt that their experiences were used to plan learning episodes. This attitude may be partially attributed to the andragogical concept of readiness and orientation to learning (Knowles,1980, 1984) in which exposure to effective learning models prepares adults for further learning. Female learners felt that a focus on societal issues was encouraged which supports the notion that "women hold a distinctly different worldview from men" (Cox, 1994, p. 106). The recent proliferation and ubiquity of teamwork and team-building activities in business and industry may have influenced participants' attitudes toward team teaching. A considerable number of participants worked full-time, thus many participants may have been exposed to teamwork and team-building activities. Instructor collaboration, especially during post-class de-briefing dialogues provided insights to class and individual learner's intellectual growth, comprehension problems, participation, and team-building. Faculty regarded the team teaching exercise as a positive influence on learners' capability to synthesize and apply course content. This affect on performance agrees with prior investigations reporting that team teaching "improves the professional lives of teachers and leads to the improvement of student performance" (Erb and Doda, 1989, p. 26).

Organizational and Topical Issues. Organizational issues included planning, evaluation, and communication. Topical issues were concerned primarily with course content. The operational structure of the team teaching effort in this study served to enhance performance. The social and political framework within which the team worked prescribed a consensus between members.

Course preparation time was increased compared to prior planning experiences; i.e., time was spent early in course revision and planning to take advantage of each instructor's individual strengths and expertise. Formative (in-process) development through weekly faculty meetings and debriefing sessions required time to discuss and reach agreement on revisions of delivery and content. Faculty agreed that although collaboration increased planning time, it generated better results in (a) instructional delivery and (b) (through formal and informal evaluations), learner synthesis of course content.

Addressing possible problems with team-teaching early in the course helped to alleviate some participant apprehension around evaluation. For example, the instructors solicited participant input on design of evaluations after several participants indicated that they anticipated problems with two instructors evaluating course deliverables. An instructor reported that "it was easier to stand by our decision with two persons than it would have been with one making the decision. I felt our position was strengthened by the fact that there were two of us" (pb-81-82).

Communication was expanded through requirements for faculty discussion, negotiation, and compromise. Divergent views and inquiry were encouraged through collaboration, thus establishing an environment conducive to dialogue. A great deal of dialogue is required for successful collaboration (Austin and Baldwin, 1991). An unambiguous structure and organization helped to shape and maintain a process of communication that supported interaction.

The content of the course in this study focused on analyzing organizational situations from more than one vantage point or "reframing" (Bolman and Deal, 1991). Case studies and problem-solving exercises promoted the use of learner teams in the class thus enhancing participant interaction and communication. Unlike foundations and survey courses designed to familiarize the student with a broad cross-section of a given subject, the course in this study was a special topics seminar that required analysis and synthesis. Additionally, HRD's "applied and interdisciplinary nature" (Chalofsky, 1992, p. 175) tended to reinforce interaction and teamwork in the classroom.

Andragogy and Team Teaching. Generally speaking, all participants thought that team-teaching supported andragogy only if the instructors were andragogical in their approach to instruction and the course was structured to support this methodology. One participant learner said, "I think team teaching increases the chances that it will be more andragogical" (bp-68). Faculty participants were more cautious in their universal endorsement of team teaching promoting andragogy. The new faculty member reported that "I know that if you [the other instructor] weren't andragogical too we'd have a harder time of it" (pa-36).

The quantitative analysis generally supported the andragogical model. Although no inferences or results can be drawn based on previous PALS research (see Conti, 1978, 1979, 1983), results revealed that faculty were more facilitators than instructors, the learning environment was conducive to interaction, teaching styles were varied, and dialogue was encouraged - all tenets of andragogy as developed by Knowles (1975, 1980, 1984).

Faculty Collaboration and Socialization. Faculty collaboration was enhanced through team-teaching. Instructional skills, cognitive development, collegiality, and dialogue were promoted by this collaboration. An additional benefit was to encourage reflective practice about teaching among faculty, an activity typically not a common component of university culture. Enhanced dialogue provided faculty with insightful criticisms and exposure to alternative teaching and personality styles necessary to reframe thinking and create an awareness of the processes of thoughts and feelings that create the learning experience. As participant-observers, faculty felt that dialogue as a validation or grounding of learning was critical in improving on-going facilitation and instruction, in formative evaluation, and in socialization. Improved collegiality as a component of socialization may serve to enhance the academic culture especially within the HRD program.

Socialization of new faculty may be reinforced by team-teaching and collaboration. Stage models of socialization indicate that during the first few months on the job, new employees seek to learn about the new setting by relying on interpersonal sources such as co-workers and mentors (Feldman, 1976; VanMaanen, 1975; Schein, 1988). This study supports the notion that team teaching greatly enhances and accelerates the socialization of new faculty not only by interpersonal sources but through the noninterpersonal source of observation of others "in salient situations" (Ostroff & Kozlowski, 1992, p. 851).

Team teaching, like collaborative instruction and research, fits within the culture of the academic profession and the discipline of human resource development. Teaching that encourages team learning and interactive modes of instruction promotes intellectual community and aids in the identity of HRD as a profession. Additionally, through occupational socialization, it promotes individual identification with the academic profession as well as the HRD discipline.

Individual philosophies around instructional methods and other principles of adult learning had an affect on faculty collaboration, socialization, and the success of team teaching in this study. This conclusion supports Peters and Jarvis' (1991) supposition that the relationship between teachers is more complex when philosophical viewpoints differ. Since philosophies include social and political dimensions, instructors with diverse social and political viewpoints should critically examine efforts to collaborate and team teach.

Gender and subordination issues had no overt influence on faculty collaboration and socialization; however, they did play a surreptitious role in facilitating collaboration. Status imposed an intrinsic authority and decision making arrangement (Fox and Faver, 1982) that served as a mediating force when problems over evaluation strategies proved difficult to solve. Although gender was an insignificant issue in this study, it has been reported that women and men approach collaborative teaching relationships differently (Austin & Baldwin, 1991). Even though these differences were not brought to light as a result of this study, the fact that a faculty member was subordinate and of different gender should not be ignored as possible ambiguous variables influencing faculty collaboration and socialization.

Research implications. Every effort was made to make this study valid and to enhance credibility through multiple research methods, however this research was not without limitations. Much of what was learned in this study was dependent on the interaction between investigator(s) and the context of the study (Lincoln and Guba, 1985, p. 208).

Because only one graduate level HRD class was studied, future research should be conducted that examines team teaching and faculty collaboration in a variety of adult learning environments including undergraduate and continuing education classes within private and public, and large and small institutions all need to be examined. The design of this study did not take into account empirical measures of effectiveness, thus comparisons of quantitative evaluations may advance research into the effect of team teaching on learner performance.

Future research is also needed to investigate socialization as a learning strategy for newcomer faculty. Moreover, measures of organizational impact are needed. The influence that team teaching has on organizational climate and culture could serve to establish faculty collaboration as a mechanism for attracting, selecting, and socializing new members. More research is needed on collaboration of faculty of different gender as well as differences in status. Few researchers have examined the experiences with collaboration of academic women (Austin & Baldwin, 1991, p.74), especially women in high status positions. Finally, additional qualitative studies are needed concerning team teaching and faculty collaboration. A variety of methodologies such as naturalistic inquiry, educational ethnography, and case study should be pursued to provide research which "gets beyond initial conceptions" and provides human resource development research with a quality of "undeniability" (Miles and Huberman, 1994, p. 1) and truth.

Summary

Findings of this study suggest that (a) adult learners have a positive attitude toward team teaching of HRD at the graduate level (b) faculty collaboration and socialization are supported and enhanced by team teaching, and (c) team teaching generally supports andragogy. This research also uncovered several potential benefits of team teaching. First, as a socializing activity team teaching may positively influence newcomer socialization and thus affect the culture and climate of the organization. Second, the interactive nature of team teaching may be a potential source of intellectual stimulation and cognitive development for learners as well as faculty. Finally, team teaching reflects the longing for teamwork and team learning in organizations and may serve as a model of the potential of collective learning.

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Reliability Testing of Multirater Feedback

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Multirater feedback is an essential part of a seminar concept used by ARAMARK. Before testing the effectiveness of the seminars in terms of learning effects and transfer of training, the reliability and validity of multirating has to be tested. The conclusion is that trainers are better raters, Formative and summative processes and assessments should be separated.

ARAMARK is the top catering service company in the world. The Human Resource Management and HRDdivision of ARAMARK in Germany has developed a system of training and personal development based on a seminar concept in which multirating plays a vital role. Three types of seminars - ARAMARK Manager Rallyes I, II and III - have been developed and are carried out by a preferred supplier. This seminar concept started in an experimental form in 1993. ARAMARK wants to know how effective the seminar concept is and whether transfer of training takes place at different levels in the organization. Before measuring the effectiveness of a seminar concept, we need to know whether the multirater feedback system is reliable and valid. In this study of the ARA Manager Rallye during 1994, the scores of five ARA Manager seminars are analysed from a psychometric perspective. The quality of measurements is evaluated with a focus on the improvement of a measuring instrument. According to measurement theory, any measurement instrument should meet the general standard of (1) validity and (2) reliability. A test has validity if it measures what it purports to measure. The reliability of a test refers to the consistency of the evaluation results. In the fstudy it refers to the consistency between different raters, or interrater reliability. To be valid, test scores should also be reliable.

The ARA Manager Rallye

The ARA Manager Rallye is an instrument used during ARA Manager seminars
(1) to assess the individual and team performances of participants, and simultaneously
(2) to train the assessment skills of participants.

By that, the ARA Manager Rallye tries to fulfill the four functions of
(a) selection of participants who will not be able to finish the seminar successfully.
(b) information of participants and trainers about achievement of seminar goals
(c) motivation of participants to goal-orientation and to apply the *ARA Systemtasks*.
(d) coaching of participants in the planning of other learning activities and in transfer of seminar content to the work setting.

One of the key components of the Manager Rallye is multirater feedback. This feedback is used for assessing individual performance, group performance, and for managers to learn and use assessment skills. This type of assessment is also used for personnel decisions, for outplacement, and succesion planning. According to Bracken (1994) multirater systems can fail or succeed dependent on process design and planning, instrument development, instrument design, administration, feedback processing and reporting, and action planning as a result of feedback. Russel (1994): "The validity of these reasons is now considered suspect. Other trainees are not always accurate in their observations and thgis can cause faulty or misleading feedback". Russel indicates other causes for invalid feedback: trainees are not skilled at giving feedback, being more evaluative than objective, etc (Russell, 1994, p. 49). Audio and video techniques are better.

It is clear from the introduction that the focus will be on testing the feedback processing and reporting in terms of validity and reliability measurement. A fair and valid

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assessment instrument must be reliable. Concerning reliability, in the ARA Manager Rallye differences between raters are thought to be a major possible source of error, since the end score in the majority of stages is determined by a lot of different raters. For example, in the different stages D, B, and C, the average of individual participant ratings (including self-ratings) determines 50 percent of the performance score. Ratings of the trainer, together with ratings of training professionals of the personnel departments and HRD in the stage D (*ARA Manager Duties*), determine(s) also 50 percent of the end score in these stages. In the study, the trainer together with training profes-sionals of HRD and Personnel is called the trainer team. To be meaningful, the end score in each of the stages in which different raters give their individual judgments should be an average of ratings which are reasonably consistent between these different raters. That means both between participants, participants and trainer (team), and members of the trainer team.

Research Questions

Four research questions are formulated regarding the reliability and validity of the ARAMARK Manager Rallye:

(1) Are the scores in the ARAMARK Manager Rallye consistent between
    (a) ratings of participants and trainer team?
    (b) ratings of participants?
    (c) ratings of trainer and training professionals?
    (d) self-ratings and ratings of members of the trainer team?
(2) Are the scores in the ARA Manager Rallye consistent
    (a) stages and end score of the seminar?
    (b) different stages?
(3) Do the scores in the ARA Manager Rallye achieve a sufficient amount of spread?
(4) How could the quality of scores in the ARA Manager Rallye be improved?

The ARAMARK Manager Rallyes consist of different stages, mostly 6. Starting with a Check In (to assess prior knowledge) and ending with a Check Out (to test the skills and knowledge needed for a (middle) management position, the other stages cover different aspects of performance. To determine the interrater reliability, scores of one of these stages (ARA Manager Aufgabe: stage D) are analysed. This stage is common for all the seminars. Analyses are carried out at three different levels: (1) average stage scores, (2) stage scores, and (3) criterium scores. On each of the levels, Spearman rank correlation coefficients r_{sp} are determined by using SPSS/PC 4.0 to indicate the degree of association between raters.

The following classification regarding the interrater correlation coefficient is used:

$r_{Sp} \geq .80$: excellent
$.70 \leq r_{Sp} < .80$: good
$.60 \leq r_{Sp} < .70$: satisfactory
$r_{Sp} < .60$: unsatisfactory

Sample of cases

In the study the scores of two seminars ARA Manager 1, two seminars ARA Manager 2, and one seminar ARA Manager 3 are analysed. Their characteristics are shown in Table 1. Beforehand, it was clear that it would not be possible to compute a statistic indicating the interrater reliability of all seminars together. Since in each seminar different raters are present, and (somewhat) different rating scales are used, a decision was made to analyse each seminar separately. This would then concern the stages, in which different raters give their individual judgments. However, between these three different kinds of stages in each seminar also a lot of differences exist regarding the composition of subgroups, and the use of different rating scales in different stages. That's why it seemed more meaningful to analyse ratings from each stage separately. The only stage of these three which has the same structure in every seminar is stage D (*ARA Manager Aufgabe(Duties)*). Aside from this, in the other stages not enough cases are rated to compute a meaningful correlation co-efficient. The ARA Manager Aufgabe is also the only stage in which both internal and external assessments take place. Internal assessments involve 'those actually participating in the learning/teaching process having control over the assessment' (Bell and Harris, 1990). In the ARA Manager Rallye, the trainer and participants are the internal assessors. External assessments involve an outsider to judge performances. The training professionals of ARAMARK are external assessors. This seems to show enough evidence that the stage ARA Manager Aufgabe of each seminar is the stage most appropriate to answer research question 1.

Table 1: Characteristics of the seminars

Seminar	Period	Trainer	N of participants[a]	N of training professionals	N of stages
ARA Manager 1	February 1994	1	13	2	8
ARA Manager 1	May 1994	2	17	2	8
ARA Manager 2	Jan./Febr. 1994	1	20	1	8
ARA Manager 2	June 1994	2	22	2	7
ARA Manager 3	April 1994	2	20	2	6

Results

Results research question 1: In general, the all in interrater correlation coefficients we found are good or excellent as ***average** stage scores*. The average rating of participants is higher than the average trainer team rating, self-ratings are somewhat higher than the average participants' rating. However, when taking a look at stage D (Ara Manager Duties) the results are different (see table 2)

Table 2 : Average interrater correlations between different raters on stage scores in the stage ARA Manager Duties

	Seminar				
Raters	AM1[a]	AM1[b]	AM2[c]	AM2[d]	AM3
Participants/Trainer Team	.1701	.4756	.4119	.4960	.5005
Participants	.1130	.3328	.3488	.4207	.3533
Trainer Team	.4119	.7706	.5366	.8967	.7892

[a]February 1994. [b]May 1994. [c]January 1994. [d]June 1994. $^{*}p<.01$. $^{**}p<.001$.

Table 2 shows that the average intercorrelation between participants is unsatisfactory, just like between participants and trainer team. Between the different members of the trainer team the intercorrelations are good in three seminars. On **criterium scores** the average intercorrelations between participants lie in general between .20 and .30. Average intercorrelations between members of the trainer team are at least satisfactory at a number of criteria varying from one to seven. At almost all criteria at least one of the three intercorrelations between members of the trainer team is satisfactory. The conclusion which can be drawn is that only ratings of training professionals are in general satisfactory or almost satisfactory consistent.

Results research question 2:
To determine the consistency between the stages and end score, correlation coefficients are computed. Table 3 shows the results for the stages A, D, E, and F.
In general, intercorrelations between stages and end score are good, but low correlations exist between the Check In and end score of two seminars, and the Check Out of ARA Manager 1 of May and the end score. Analyses of the stages B and C show low correlations of these stages with the end score, except for two of them.

Table 3: Intercorrelations Between Scores in Stages and End Score in the ARA Manager Rallye

	Seminar				
Stage	AM1[a]	AM1[b]	AM2[c]	AM2[d]	AM3
Check In (A)	.6628*	.2394	.4872	.8138**	.6597**
Check Out (E)	.6814*	.4031	.7915**	.6219*	.6754**
Manager Duty Stage (D)	.6705*	.9203**	.7854*	.8934**	.7539**
Assessment Stage (F)	.7928**	.9321**	.8993**	.8963**	.7841**

[a]February 1994. [b]May 1994. [c]January 1994. [d]June 1994. *$p < .01$. **$p < .001$.

Analyses carried out to determine the relationship between the stages show that intercorrelations between stages are low. In three seminars the score of the Check Out correlates lowly with total score and in four seminars with the Check In. In general, scores of the stages B and C correlate lowly, or even negatively, with other stages. The degree to which scores between participants change after each stage in the seminar varies.

Analyses of Stage Scores
If the ratings are determined to be *in*consistent between raters, it would be less meaningful to compute an end score consisting of an average of average ratings like the average stage score (Drenth and Sijtsma, 1990). That's why the next step is to determine the interreliability between ratings of participants' and trainer team ratings (research question 1 a), participants (1 b), the ratings of trainer and training professionals (1 c), and between self-ratings and trainer team ratings (1 d)) on the stage score level. The stage score is the sum of the ratings on ten criteria. The results are shown in Table 4 and 5.

Results
The average correlation between participants and trainer team is unsatisfactory. The range between minimum and maximum intercorrelations is relatively large in AM1[a]. (In this seminar even more than one third of the correlations is negative). The average intercorrelation between individual participants is unsatisfactory. The range between the minimum and maximum correlation is relatively large in the seminars ARA Manager 1.
In the seminars AM1[b], AM2[d], and AM3, good or excellent sizes of average intercorrelations are achieved between members of the trainer team. In these seminars maximum intercorrelations are excellent, minimum correlations good or excellent. In the AM2[c], the correlation coefficient is significant, but does not achieve .60. None of the intercorrelations between self-ratings and trainer team ratings achieves .60, but in the seminar AM3 a significant intercorrelation exist.

Table 4: Average Interrater Correlations Between Different Raters on Stage Scores in the Stage ARA Manager Aufgabe

	Seminar				
Raters	AM1[a]	AM1[b]	AM2[c]	AM2[d]	AM3
Participants/TT					
Average Correlation	.1701	.4756	.4119	.4960	.5005
Minimum Correlation	-.6718	-.3224	-.3558	-.0518	-.0323
Maximum Correlation	.7377*	.8641**	.7341**	.7962**	.8271**
Participants					
Average Correlation	.1130	.3328	.3488	.4207	.3533
Minimum Correlation	-.7070*	-.6677*	-.4368	-.3008	-.2306
Maximum Correlation	.8461**	.8272**	.8446**	.8167**	.8112**
Trainer Team(TT)					
Average Correlation	.4119	.7706	.5366	.8967	.7892
Minimum Correlation	.2427	.6797*	.5366*	.8756**	.7223**
Maximum Correlation	.6287	.8694**	.5366*	.9261**	.8891**

[a]February 1994. [b]May 1994. [c]January 1994. [d]June 1994. *$p < .01$. **$p < .001$.

Table 5: Interrater correlations Between Self-Ratings and Average Ratings of Trainer Team on Stage Scores in the ARA Manager Aufgabe

	Seminar				
Stage	AM1[a]	AM1[b]	AM2[c]	AM2[d]	AM3
ARA Manager Aufgabe (D)	.1808	.4258	.4909	.3014	.5187*

[a]February 1994. [b]May 1994. [c]January 1994. [d]June 1994. *$p < .01$

Analyses of Criterium Scores

The stage scores analysed are still scores which result from other scores. They are the sum of ratings on the different criteria of the rating scale used. To be meaningful the sum of ratings on the different criteria has to be based on ratings which are reasonably consistent between the different raters on each criterium. For the seminars ARA Manager 1 of May, and ARA Manager 2 of January, the interrater reliability on criterium scores between participants is determined. For all seminars, the interrater reliabilities between members of the trainer team are determined on every criterium. To determine if there is a difference between the intercorrelations between pairs of members of the trainer team, the average of the intercorrelations on ten criteria is determined for each pair. The results are shown in appendix A.

Results research question 3:

To determine the amount of spread of the end scores of the stages and the end score of the seminar, average scores and their standard deviations are determined in each stage. A total of 1000 points can be gathered. In two seminars the average score is above or almost equals 900 points. In general, average scores lie above 80 points in the stages. In nine of the total of seventeen stages B and C, the average score lies above 900. In the stages in which only the trainer team judges performances, the spread of scores tend to be much larger than in the stages in which participants determine a part of the end score. Both Check In and Check Out of ARA Manager 1 of May 1994 have relatively small standard deviations. The average score above 90 in the stage Assessment TL in two seminars is striking, as as the low minimum scores in this stage in four seminars.

Discussion

The results regarding the interrater reliability (research question 1) and the validity (research questions 2 and 3) show that the ratings of participants affect the interrater reliability negatively and that the stages in which they determine a part of the end score show a less spread of scores and high average scores. On the basis of these results a plea can be held to separate the formative and summative stages of the ARAMARK Manager Rallye with regard to the procedure of multirater feedback. In the formative stages B and C, participants should get the chance to improve their performances without much effect on their end scores. These are the stages in which the scores should indicate the progress of performances and in which the participants' learning process can be sharpened. In the summative stages however, assessment of performances should take place by the HRM division management, so that the client determines the quality and not the preferred supplier who delivers the seminars.

To improve the interrater reliability and validity of the multirater test scores a number of improvements are possible:

Since the analyses carried out only considered the *scores* in the ARA Manager Rallye, more analyses regarding the content of tests, the relationship of the content of tests and the goals of each stage and the content of the stage, are necessary to give exact recommendations regarding the improvement of the interrater reliability and validity of the test scores.

The validity of the test scores of the trainees can be questioned, because 13 out of 22 trainees had responses of over 900 points, which is a very high score, but inflences bij trainees themselves.

The use of a Check In to select trainees in the beginning can be questioned too. The group of trainees proves to be not homogeneous which is one of the targets. Moreover, the Check In stage is not very powerful in predicting the end results. Ons of the reasons for this might be that trainees are tested on knowledge, while most of the seminar is directed on (management) skills. A performance profile could be setup more distinctly, and the criteria could be optimized and tested much better.

Trainers proved to be more consistent and reliable in their ratings, which indicates a more valid and reliable understanding of the assessment criteria involved, the correlations are significantly higher than those of trainees. This is also the case with the assessors of Personnel Department and HRD, with a lesser degree of reliability.

Next suggestions are meant as a tool for optimizing the Rallye as a training and assessment tool:

a) separation of formative and summative evaluation;
b) controlling of the real learning effects in Check In and Check out: not only ratings of collegues, but also performance measurements;
c) changing the rating scale, which is mixture of nominal and interval scale;
d) optimizing the (number and the content of) test items, which proved to be not reliable;
e) a better training procedure for trainees to assess on the basis of well operationalized test items.

When the rallye has to function as a really good training tool in skills, the first thing is to have a reliable rating instrument, which seems to be not very easy when having a look in literature. Personnel decisions and career development based on such an instrument have to be reconsidered or at least to be completed with other valid job information.

The assumptions behind the instrument are well elaborated, but practice is harsh.

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Appendix A: Average Interrater correlations Between Participants and Between Trainer Team in the ARA Manager Aufgabe

	Criterium									
Raters	1	2	3	4	5	6	7	8	9	10
ARA Manager 1 of May										
Participants	.2530	.2571	.2503	.1958	.0336	.1385	.1000	.1728	.1799	.2397
Trainer Team	.5639	.5690	.7280	.6560	.5223	.3979	.3670	.5610	.6944	.4003
Minimum Correlation	.4133	.4821	.6880*	.5277	.3052	.2890	.3069	.2997	.6429*	.3179
Maximum Correlation	.6832*	.7275**	.7242**	.8200**	.7048**	.6215*	.4336	.7015*	.7694**	.4578
ARA Manager 2 of January										
Participants	.2045	.2471	.3025	.1103	.1791	.0865	.1369	.2346	.3266	.2687
Trainer Team	.5648	.3388	.5977	.3790	.4658	.1591	.4737	-.0803	.7209	.5053
ARA Manager 2 of June										
Trainer Team	.7798	.6435	.7234	.5938	.5169	.6203	.4216	.6898	.7162	.7340
Minimum Correlation	.7393*	.5840*	.5790*	.5006*	.3839	.5962*	.2877	.4926*	.6704**	.6815**
Maximum Correlation	.8146*	.6950*	.9177**	.7691*	.6146*	.6664*	.5820*	.8002**	.7420**	.8037**
ARA Manager 3										
Trainer Team	.7129	.7460	.3083	.3862	.3552	.5186	.6683	.4511	.3617	.3798
Minimum Correlation	.6549*	.6535*	.1737	.1426	.2663	.3498	.5493*	.3677	.2335	.1132
Maximum Correlation	.7505*	.8960*	.3793	.7148*	.4889	.7547**	.8812**	.5248*	.4958	.5250*

In Search of an Integrative Model for HRD Evaluation

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The lack of research to further develop a theory of evaluation is a glaring shortcoming for HRD. In this paper, it is argued that the four-level Kirkpatrick system of training evaluation is really a taxonomy of outcomes and that research is needed to develop an integrated measurement model. Such a model needs to account for the effects of intervening variables that affect training outcomes and specify causal relationships. An initial integrative evaluation model that accounts for the impact of the primary intervening variables such as motivation to learn, trainability, job attitudes, personal characteristics and transfer of training climate is proposed. A new role for trainee reactions is specified. Key studies supporting the model are reviewed and a research agenda is proposed.

Evaluation of interventions is one of the most critical issues facing the field of Human Resource Development (HRD) today. Increasing global competition has led to intense pressure on HRD to demonstrate that programs are directly contributing to the "bottom line" of the organization. Yet, the pre-eminent evaluation model, the four level Kirkpatrick model, has received alarmingly little research and is seldom fully implemented in organizations (Kimmerling, 1993) leaving them ill-equipped to respond to this pressure. A critical need exists for sound research on this widely accepted evaluation model to give organizations a more sound methodology for allocating HRD resources.

The Kirkpatrick model (Kirkpatrick, 1976) for training evaluation, also known as "4-level evaluation," is widely accepted by practitioners as the standard in the field. A number of modifications to the model have been suggested, including adding a fifth level to reflect training's ultimate value (Hamblin, 1974), societal value (Kaufman & Keller, 1994) or to more specifically focus on ROI (Phillips, 1995). Brinkerhoff (1987) proposes a six level model that, in essence, adds two formative evaluation stages as precursors to Kirkpatrick's four levels. While this work has contributed greatly to our conceptual thinking about evaluation, the models have received only limited empirical testing. All of them are best labeled as taxonomies which are simply classification schemes (Bobko & Russell, 1991).

Bobko and Russell (1991), citing Wallace (1983), noted that exploratory designs and case studies are the first steps in the development of theory, while the final steps are correlational and experimental studies. According the them, taxonomies are the link between the initial stages and the final confirmatory stages of developing theory. While the Kirkpatrick model is elegant in its simplicity and is a very useful taxonomy, the lack of research to further develop a theory of evaluation is a glaring shortcoming for HRD. If HRD is to continue to grow as a profession, an evaluation model grounded in research is necessary.

One shortcoming of taxonomies is that they do not fully identify all the constructs underlying the phenomena of interest, making confirmatory evaluation impossible. Not surprisingly then, Alliger and Janak (1989), in their comprehensive review of the research on the Kirkpatrick model, note that the implied causal relationships between each level of this somewhat simple taxonomy have not been demonstrated by research. Their search of the relevant academic literature located only 12 articles since 1959 reporting 26 correlations between levels in training programs out of 203 articles that reported any type of evaluation results. Furthermore, only *three* studies (Clement, 1982; Noe & Schmitt, 1986; Wexley & Baldwin, 1986) reported full 4-level evaluations with correlations. The reported correlations varied widely, casting doubt on these assumptions and providing very limited support for the causal relationships.

It is not surprising that the correlations are weak since the "model" is really a taxonomy of training (and HRD) *outcomes*. Attempts to test causal assumptions within a taxonomy are futile because,

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by definition, taxonomies just classify, not define causal constructs. In fact, it can be argued that the correlations reported in these studies are not really a test of the model but instead an alternate approach to analyzing outcomes of the training. For example, if only the four levels of outcomes are measured and a weak correlation is reported between levels 2 and 3, all we really know is that learning from training was not associated with behavior change. In the absence of a fully specified model, we don't really know if the correlation is weak because some aspect of the training effort was not effective, or because the underlying evaluation model is not valid. Weak correlations might represent a well functioning model reporting a poorly functioning training effort.

It can be argued then that the Kirkpatrick model is inadequate as a measurement and research model. Klimoski (1991), citing Dubin (1976), notes that theories or models should have six components:

1. *Elements* or *units*, represented as constructs, that are the subject matter.
2. *Relationships* between the units.
3. *Boundaries* or *limits* of generalization.
4. *System states* and changes described.
5. *Deductions* about the theory in operation, expressed as propositions or hypotheses.
6. *Predictions* about units (p. 254-256).

The Kirkpatrick model is inadequate when assessed against all six of these criteria. Noticeably absent from the Kirkpatrick model are the large number of intervening variables that affect learning and transfer *processes* such as trainee readiness and motivation, training design, and reinforcement of training on the job (Clement, 1982). Others have proposed models of how individual differences affect training outcomes (Noe, 1986; Noe & Schmitt, 1986) and factors affecting the transfer of training (Baldwin & Ford, 1988; Broad & Newstrom, 1992). Previous evaluation studies identified by Alliger and Janak (1989) did not attempt to measure any intervening variables which is one likely reason for the wide variation in the relationships reported. It seems clear that no evaluation model can be validated without measuring and accounting for the effects of intervening variables.

A critical need exists for intensive research to move from a taxonomic approach to evaluation, to a fully specified model that meets the six criteria of good theories and models outlined above. The purpose of this paper is to take an initial step toward establishing a fully validated model for HRD evaluation. An integrative evaluation model that accounts for the impact of the primary intervening variables such as trainability and transfer of training climate is proposed. Key studies supporting this model are reviewed. It is hoped that this paper, and the dialogue that follows, will spark an intensive search for a more integrative and testable model of HRD evaluation.

Research Supporting Integrative Evaluation Models

Two studies have demonstrated the importance and feasibility of this approach by examining influences on training outcomes. Noe (1986) used path analysis to examine the relationship of trainee reactions to skill assessment, job involvement, career planning, exploratory behavior, locus of control, post-training motivation and pre-training motivation on reactions, learning, behavior change and performance improvement. Mathieu, Tannenbaum & Salas (1992) used a more powerful technique, structural equation modeling, to examine the relationships between situational constraints, assignment to training, motivation, previous education, trainee reactions, learning and behavior change.

Specific results of these studies will be discussed below, but several general conclusions can be noted that serve to justify this line of research. First, both studies supported Alliger & Janak's (1989) suggestion that "reactions" are not linearly related to learning, but instead may act as a moderator of learning. Neither found support for reactions as a primary outcome of training. Second, both studies found that complex relationships exist between the various intervening variables and the primary outcomes of learning and performance change. Third, they suggest that further research holds promise for developing a fully integrated model.

These studies also suggest that the four-level evaluation model is woefully inadequate as a diagnosis tool. Consider the case where learning is not found to occur. The usual conclusion is that something is wrong with the training program. However, if one considers the many intervening variables that remain unmeasured, it quite possible that the training program is well-designed and the problem lies outside the classroom with some element of the job or the individual. With a fully specified measurement model, the true problems with the training could be isolated. Furthermore, through proper statistical analysis that controls for the effects of intervening variables, it might be possible to show an effective training program design even when the overall group learning scores indicate poor learning outcomes. This is not to suggest that trainers are only responsible for what occurs in the training room, because in this example, if the outcomes are not positive then trainers have not accomplished their goals. Rather, it suggests that there is a complex system of influences on training outcomes that must be measured if training is to be accurately evaluated. This model would enable practitioners to correctly diagnose barriers to training effectiveness.

Proposed Model

The proposed evaluation model is shown in Figure 1. Three primary *outcome* measures (learning, behavior change and results) are shown at the right side of the model. *Primary intervening variables* (ability, motivation to learn, reaction to learning, transfer design, motivation to transfer, and external events) are shown in boxes and have arrows pointing directly to one of the outcomes. *Secondary intervening variables* (trainee readiness, job attitudes, personality characteristics, transfer climate) do not have boxes around them and have arrows pointing directly to one of the primary intervening variables.

The model as presented here describes a sequence of influences on outcomes occurring in a single learning experience. Over time, it would be expected that employees' successes at achieving results after learning experiences would enhance future motivation to learn. Said differently, over time there are many cumulative feedback loops that are not shown in detail in this model. A single feedback loop is used to represent the recurring nature of this process and the cumulative effects on the learner over time. The model itself is limited to evaluating outcomes from a single learning intervention.

Influences on Learning Outcomes

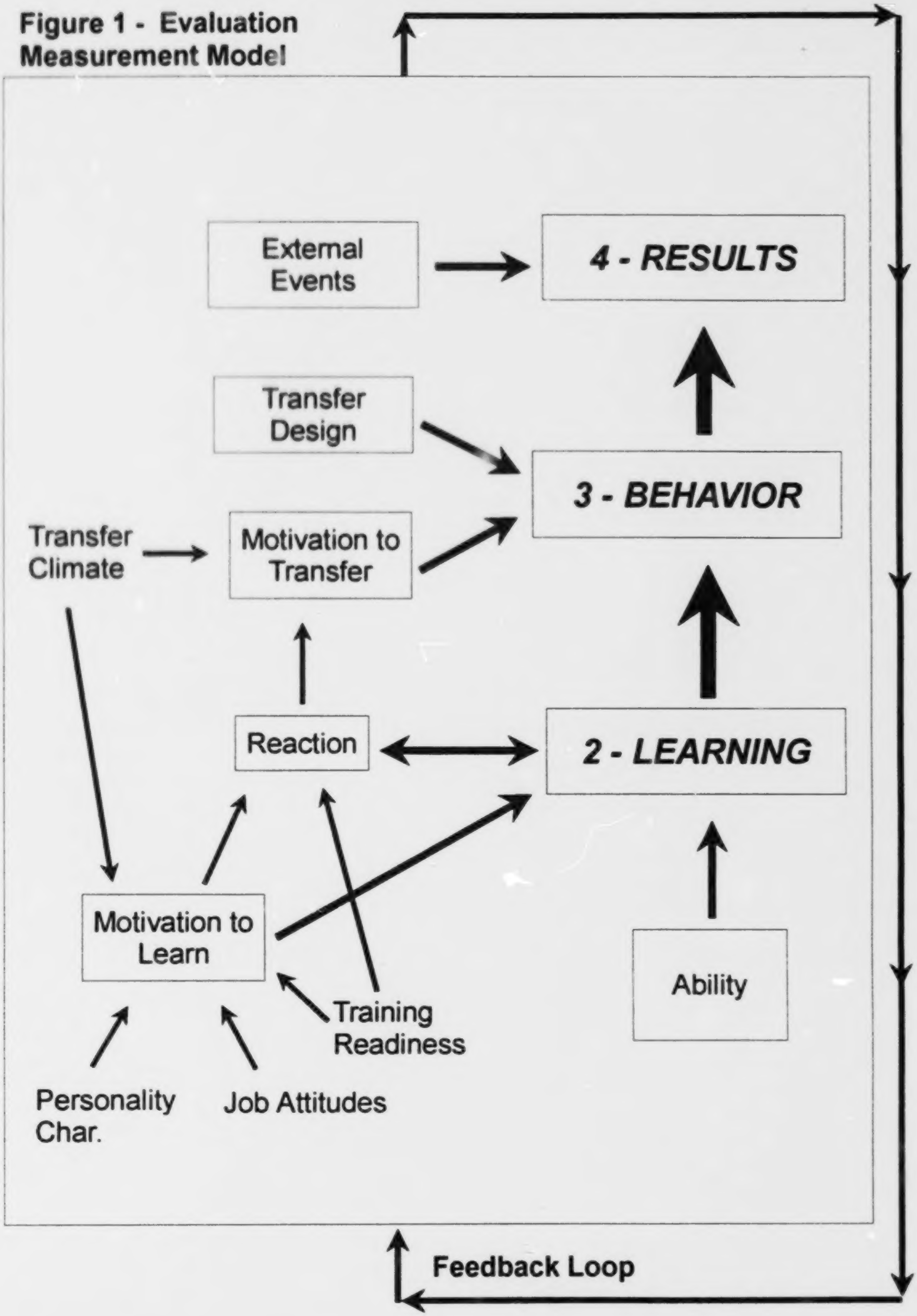
This model posits that there are three primary influences on learning: trainee reactions, motivation to learn, and ability.

The Role of Trainee Reactions Perhaps the most discussed portion of the Kirkpatrick model is the inclusion of reactions as the first level. Dixon (1990) demonstrated that there is little correlation between reactions and learning. Indeed, most learners would acknowledge that good learning can often be confusing and frustrating. While some may argue that trainee reactions are unimportant, as a practical matter few practitioners can afford to totally ignore the reaction of their trainees. Cognitive scientists point out that trainee reactions can play a role in building interest and attention and enhancing motivation.

The question here is whether trainee reactions are a primary outcome of training that is linearly related to learning, or simply another intervening variable that impacts upon learning. Mathieu et al. (1992) found that reactions functioned as a moderator of the relationship between training motivation and learning as well as a mediator of other relationships. These results offer the first explanation for the generally low correlations between reactions and learning observed by Aliger and Janak (1989). The author's note that had they examined only the linear relationship, they too would have concluded that reactions had no significant effect on learning. Instead, they conclude that they are important, but not in and of themselves. Similarly, Noe (1986) found no support for a direct link between reactions and learning.

While these findings fly in the face of many years of training practice, and may challenge the humanistic values of many practitioners, they suggest that trainee reactions should be removed from the model as a primary outcome of training. Rather, they are included only as having a complex role moderating the relationship between motivation to learn and learning. Trainee reactions are posited to

Figure 1 - Evaluation Measurement Model


External Events
4 - RESULTS
Transfer Design
3 - BEHAVIOR
Transfer Climate
Motivation to Transfer
Reaction
2 - LEARNING
Motivation to Learn
Training Readiness
Ability
Personality Char.
Job Attitudes
Feedback Loop

have a reciprocal relationship with learning, where more positive reactions to the training are expected to enhance learning and trainees who are more successful during learning are expected to have more positive reactions to the learning experience.

Pre-training Motivation Trainee motivation to learn then has a direct relationship with learning. Pre-training motivation and trainee attitudes have not received enough attention in the literature. Three categories of variables are hypothesized to be primary influences on motivation to learn: trainee readiness for training, job attitudes, and personality characteristics.

Trainee Readiness. Several studies have examined influences on trainees' readiness to enter and participate in training programs. Hicks and Klimoski (1987) found that giving trainees a choice of whether to attend training or not increased motivation to learn and improved learning outcomes. Baldwin, Magjuka and Loher (1991) further found that trainees having a choice of training content had greater motivation to learn. Those who were allowed to choose, but then were not given their choice of training, became less motivated than those who were not allowed to choose at all. Thus, the degree to which a trainee is involved in the needs assessment process and given choices about training would be expected to influence motivation to learn. The notion of meeting trainees expectations and desires for training has also received support in the literature (Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991; Hicks & Klimoski, 1987). Those trainees who do not feel the training will meet their needs will be less motivated and less likely to learn.

It is likely that motivation to learn will vary by trainee's readiness for training. Readiness for training includes such variables as the degree to which trainees are involved in assessing needs, involvement in planning the training, degree to which expectations are clarified, degree of choice, and other influences.

Job attitudes. An unexplored influence on motivation to learn is the attitude of the trainee toward their organization and job. Only two studies could be located that tested this notion. Noe (1986) found a significant relationship between job involvement and learning while Tannenbaum et al. (1991) found that more committed employees performed better in training. However, Mathieu et al. (1992) did not find a significant relationship between job involvement and motivation, but attributed it to the type of training in the study. It is likely employees who exhibit more positive job attitudes would be more motivated to learn and, in turn, have more positive training outcomes. Job attitudes are hypothesized to have an indirect influence, working in combination with other factors.

Personality characteristics. Selection researchers have long been interested in the validity of personality measures in predicting performance. The "Big Five" personality dimensions (extroversion, openness to experience, neuroticism, agreeableness and conscientiousness) have been shown in a recent meta-analysis to have validity in explaining some of the variance in performance (Tett, Jackson & Rothstein, 1991). While HRD researchers have not explored these directly, other characteristics such as self-efficacy (Gist, Stevens & Bavetta, 1991) and locus of control (Noe, 1986) have been shown to be related to training outcomes. Thus, certain personality characteristics would be expected to influence motivation to learn and, in turn, learning.

Ability Long forgotten in the evaluation literature is the role general cognitive ability plays in influencing training outcomes. When evaluating a training program with a relatively homogenous group of trainees in terms of job level and educational background, it is quite likely that there is little variance in general ability and therefore little detectable influence on training outcomes. In situations where trainee groups are heterogenous in cognitive ability, or where programs are offered across an organization to groups of varying ability, it is likely that general cognitive ability would influence training outcomes. Because it is difficult, if not impossible, to control for ability through random samples in most evaluation studies, it is essential to measure and control for it statistically. Trainees with greater ability will be expected to perform better in learning activities.

Influences on Job Behavior Outcomes

Two primary influences on transfer behavior are proposed: motivation to transfer and transfer design.

Motivation to Transfer Trainees leave a training program with a certain level of motivation to utilize the training on the job. Traditional evaluation models acknowledge that transfer to the job is not certain, but fail to measure influences on transfer. A variety of influences have been suggested (Broad & Newstrom, 1992; Baldwin & Ford, 1988) that fall into two primary categories: transfer climate and reaction to training.

Transfer climate. The notion that situational constraints affect workplace performance has become established in the literature (Peters, O'Conner & Eulberg, 1985). Less certain is which constraints directly affect the transfer of training. Recently, Rouillier and Goldstein (1993) reported on the development of an instrument to measure transfer climate. They proposed that transfer climate consisted of seven dimensions: goal cues, social cues, task cues, positive reinforcement, negative reinforcement, punishment, and extinction. While they were not successful in validating the separate sub-scales in the instrument, their promising work demonstrated that transfer climate added significantly to the variance in performance explained after controlling for learning and unit performance. Tracy (1992) attempted to replicate their work, using their instrument along with his own organizational learning measures. He also found that transfer climate explained a significant portion of the variance in transfer. In addition, he refined their instrument and validated the use of an organizational learning climate scale.

Research to develop instruments to measure transfer is still in its infancy and much work remains to be done. However, even while using developmental instruments, this research has clearly shown what has been suggested in the practitioner literature for some time: non-training factors such as supervisor support for training and rewards for using training affect a trainee's motivation to transfer learning into behavior change on the job. Without controlling for the influence of transfer climate, evaluation results are likely to vary considerably and yield erroneous conclusions about the causes.

In this model, transfer climate is posited to affect motivation to transfer which in turn influences transfer of training. Trainees who work in a climate supportive of training are more likely to transfer their learning to the job. In addition, transfer climate influences motivation to learn because these trainees would have greater motivation to learn, as well as transfer.

Reaction to training. Trainee reactions are posited to have a secondary influence on motivation to transfer. It seems reasonable that trainees who had positive reactions to training would be more motivated to transfer training to the job than would trainees who had negative reactions. Tannenbaum et al. (1991) found a correlation of .45 between reactions and post-training motivation. In hierarchical regression analyses, reactions were found to be positively related to post-training commitment and motivation. Tziner, Haccoun and Kadish (1991) reported a .54 correlation between reactions and motivation to transfer. Similarly, Mathieu et al. (1992) found a significant relationship between reaction to training and post-training performance, though they did not obtain a motivation to transfer measure.

In this model, reactions are expected to impact upon motivation to transfer and work in combination with transfer climate to influence transfer. Trainees who have a positive experience in training are expected to be more motivated to use the training on the job.

Transfer Design Another likely cause of failure to transfer is that the design of the training does not provide trainees the ability to transfer the learning. That is, cognitive learning may well occur but trainees may not have an opportunity to practice the training in a job context or not be taught how to apply their new knowledge on the job. For example, several studies (Werner, O'Leary-Kelly, Baldwin, Wesley, 1994; Wexley & Baldwin, 1986) have shown that goal setting during and after training improves transfer. In a more complex task situation such as negotiation training, improved results were obtained by augmenting goal setting with self-management training (Gist, Bavetta, & Stevens, 1990). Tziner et al. (1991) showed that adding a relapse prevention module to training resulted in higher learning and greater transfer.

The degree to which transfer mechanisms are included in the design of the training itself is hypothesized to have a direct influence on the transfer of training. Trainees who are taught how to apply new knowledge and skills in a job context should have the ability to transfer the learning which, when combined with the motivation to transfer, is likely to result in greater transfer.

This component of the model is probably the most difficult to measure because there are few definitive guidelines for what constitutes appropriate transfer designs. Transfer designs are expected to vary considerably depending on different content, cultures and other situational factors. Nonetheless, methods must be developed to assess the extent to which trainees acquire the ability to transfer the learning. Clearly even the most motivated trainee will be unable to transfer the learning without knowing how to do it.

Influences on Results

One of the biggest challenges in evaluating organizational results (level 4) is isolating the effects of training. A wide variety of factors can impact upon organizational results that are completely outside the realm of training. For example, in a manufacturing environment productivity might be influenced by equipment failures, raw material shortages, price changes, absenteeism, etc. The key external factors need to be identified and controlled for. A variety of approaches can be used, ranging from simple control groups to more complex statistical methods. However, because the strategies are unique to each individual organization and training program, they can not be specified in this model beyond a single global category of external factors.

Validating the Model

The validation of this model will clearly be an ambitious undertaking. One difficulty is in finding training sites that are willing to donate the time to collect all this data. Testing of this model will require the use of sophisticated statistical techniques, the most promising of which is structural equation modeling (e.g. LISREL) which can evaluate all the causal relationships in the model simultaneously. However, this technique requires relatively large samples that are often difficult to obtain. Neither of these challenges are insurmountable. In fact, this researcher has several projects underway that should produce data to validate a significant portion of the model.

From this discussion though it should be evident that this is an effort that needs to be undertaken. From a research perspective, the simple four level taxonomy is totally inadequate. As suggested above, it is likely that the role of reactions is much different than that specified in the Kirkpatrick model. Furthermore, the model can never be validated because there are too many intervening variables that are unmeasured. It should be recognized that it is only a taxonomy, not a research model, and researchers should cease trying to validate it in its present form.

It should be equally evident though that the development and validation of a more complete model is quite feasible. Recent research points to the vital components of such a model and to the methodologies for measuring and validating it. The research agenda to move toward an integrative model should include the following:

- Validating the basic components of an integrative model.
- Identifying the relationships within the model, including classifying direct, moderating and mediating effects.
- Identifying the specific variables that should be measured within each of the major components of the model
- Developing and testing methodologies to analyze such a complex model.
- Demonstrating that a fully integrated model can explain a major portion of the variance in training outcomes.

There are practical implications for this model as well. Practitioners who use only the four level model are quite likely to arrive at erroneous conclusions about the success of their training programs. They need a model that can be used as a diagnostic tool, directing them to critical influences that need to be measured along with the outcomes and lead to accurate explanations of the outcomes obtained. It is possible that, after further research, a simpler model could be developed for routine application where much of the variance can be explained by a smaller set of variables. For instance, it may be that measuring the primary intervening variables alone will be sufficient. Or, there may be a few key variables within each category that would be sufficient to measure. There is no theoretical reason that a practitioner model more sophisticated than the Kirkpatrick model, but simpler to implement than the one described here, could not be developed.

It is ironic that this model may point the way to a more important role for reaction forms in a redesigned format. Many of the arguments about reaction forms are really the result of failing to properly specify their relationship to the more important outcomes of learning and performance. Those who argue against the use of reaction forms are correct in that they should not be a primary outcome. Those who argue for their use are also correct because they intuitively recognize that reactions do affect outcomes. The four-level taxonomy offers no other option; this model puts reactions in the proper category of an important influence on outcomes, but not an outcome in and of itself. An interesting research question is whether the reaction forms that collect self-reports of motivation to transfer, transfer design, motivation to learn, personal characteristics, transfer climate, etc. might be reasonable surrogate measures of these constructs. If so, then the measurement process could be greatly simplified for practitioners.

Conclusion

It seems that thirty-five years is much too long to rely on such a simple and taxonomy of training evaluation. In this paper I have argued for moving away from a taxonomic evaluation system to the development and testing of a true model of HRD evaluation. The model presented here is an initial step in that direction and will surely be refined as research is conducted to test it. It should be realized from looking at this model that the development and validation of a fully specified HRD evaluation model is within our reach. The methodologies to analyze such a model are now well established and sufficient research exists to develop reasonable research hypotheses. Reliance on the simple four level taxonomy only serves to minimize the value, impact and sophistication of the intervention tools we employ. If HRD is to grow as a discipline and as a profession, it seems imperative that researchers work deliberately to develop a more integrative and testable model.

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Building Training on the Pillars: Applying Total Quality in Human Resource Development

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The application of total quality management in human resouce development is the focus of this paper. An overview of five leading total quality writers is summarized, from which four basic principles, or pillars, are derived and serve as the basis of the application of total quality with the instructional setting. Examples of the relationship of the four pillars to instructional delivery are then presented. Comments regarding instructional evaluation, and the need to expand the current framework of formative and summative evaluation to include implementative evaluation concludes the paper.

A major world wide force in organizational development, public and private, is the total quality movement. Launched initially in Japan, TQM and CQI (continuous quality improvement is becoming an integral part of the lexicon of organizational literature. Organizations are rapidly moving to implement total quality practices, with many attempts being highly successful, but too many are becoming dismal failures.

A major chapter in many TQM/CQI success stories is the integration of education and training within the total quality functions of the organization. Much has been written of the need and importance of the human resource development program playing a central role in any TQM/CQI effort. What has not been emphasized as much is the need to assimilate within the HRD program the principles and practices of TQM/CQI. The instruction itself should reflect and demonstrate the demeanor or cultural behavior desired within the organization.

This paper addresses the issue of applying TQM/CAI in HRD. It begins first with an overview of the major contributions of leading total quality writers, from which four basic principles, or pillars, are derived and serve as the basis of the application of total quality with the instructional setting. Examples are given to illustrate the relationship of the four pillars to instructional delivery. The paper concludes with an observation regarding of instructional evaluation, and the need to expand the current framework of formative and summative evaluation to include another central function, identified as implementative evaluation.

The Basis of TQM/CQI

The five recognized gerus of the total quality management are W. Edwards Deming, Armand A. Feigenbaum, Joseph M. Juran, Kaoru Ishikawa, and Philip B. Crosby. Individually they have molded the framework upon which present TQM/CQI practices are based. Table 1, on the following two pages, presents the major functions described by each writer within six sequential steps, from the initial commitment to total quality through to the solidification of the gains achieved.

From an analysis of the commonalities of the basic philosophies and operational concepts of these five writers, four common principles can be identified and described. Together they form the basis of both the application of TQM/CQI within the organization, and the integration of TQM/CQI in the instructional, HRD, development and delivery. The principles, identified by the authors as four pillers, are discussed (following Table 1) within the context of their organizational relationship and their application in HRD.

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Table 1 **Quality Improvement Concepts - A Comparison of W. Edwards Deming, Armand A. Feigenbaum, Joseph M. Juran, Kaoru Ishikawa/J.U.S.E., and Philip B. Crosby**[1]

THE COMMON PHASES/STEPS	THE DEMMING MODEL	THE FEIGENBAUM/ JURAN MODEL	THE ISHIKAWA/ J.U.S.E. MODEL	THE CROSBY MODEL
	1 Create constancy of purpose. 2 Adopt a new philosophy.	1 Create the steering arm. 2 Define the scope, charter. 3 Appoint members and train.	1 Create the design and development team. 2 Define the scope, charter	1 Commitment from management. 2 Communicate Quality Awareness.
1. Steering Arm	7 Institute leadership.	4 Create the internal machinery.	3 Appoint members and train. 4 Create the machinery.	3 Create Quality Improvement Organization.
————	13 Education and retraining.	5 Form a company-wide task force to ensure breakthrough.	5 Form a Quality Council.	4 Form a Quality Council.
	5 Improve constantly the system. 8 Drive out fear. 9 Break down dept. barriers.	6 Design the diagnostic package and instruments. 7 Collect data and analyze prior operations. 8 Creat new data, collect and assemble.	6 Create mamagement review structures. 7 Perform annual review of operations problems. 8 Conduct customer market survey.	5 Measure non-conformance
2. Diagnosis Journey		9 Analyze data and interpret. 10 Create a mosaic of knowledge to serve as a guide to management decision and action. 11 Train pilot areas and assign priority to projects.	9 Analyze data and interpret results. 10 Create the policy deployment package, vision, objectives and tactical items as a guide to management decision and action.	6 Set goals. 7 Plan Quality Day.
————	6 Training and retraining.	12 Summarize past data; conduct pareto analysis of symptoms.	11 Train pilot areas, select projects and develop ation plans.	
	4 /end Price tags awards.	13 Theorize on causes of symptoms. 14 Test theories; collect and analyze data on capabilities.	12 Gather specific historical data relating to each project. 13 Analyze data, develop desision themes and lay out structures.	8 Quality Education. 9 Cost of Quality Evaluation.
3, Project Journey - From Sympton to Cause		15 Narrow list of theories; identify experimental data needed. 16 Design emperiments. 17 Approve design; provide authority. 18 Conduct experiment; collect, analyze and present data; embellish proof of cause.	14 Develop problems specs and identify additional data needed. 15 Present project data to lead team using the QI Story and obtain approval. 16 Analyze for possible root causes, using fishbone, pareto, structure free, etc.	

Table 1 **Quality Improvement Concepts - A Comparison of W. Edwards Deming, Armand A. Feigenbaum, Joseph M. Juran, Kaoru Ishikawa/J.U.S.E., and Philip B. Crosby (continued)**[1]

THE COMMON PHASES/STEPS	THE DEMMING MODEL	THE FEIGENBAUM/ JURAN MODEL	THE ISHIKAWA/ J.U.S.E. MODEL	THE CROSBY MODEL
4 Project Journey - From Cause to Remedy	6 Training and retraining. 10 Eliminate slogans and targets.	19 Consider and propose remedies. 20 Test remedy. 21 Action to institute remedy; control at new level.	17 Select possible solutions and remedies. 18 Perform trial implementation. 19 Take action to implement solution.	
5 Remedial Journey	6 Training and retraining. 11 Eliminate numerical quotas. 3 Cease dependence on mass inspection. 12 Remove barriers to workman's pride.	22 Install tools for early warning sighs and monitori. 23 Design and implement methods of foolproofing the "hardware" and communications. 24 Deal with resistance to change through direction, training and recognition. 25 Develop detained specifications to assure fitness for use.	20 Create indicators and evaluate impact. 21 Design feedback mechanisms and standardize terms and glossaries. 22 Assure involvement of key mnagers through policy deployment and total recognition. 23 Develop valid requirements based upon customer needs and wants.	11 Remove cause of error. 12 Recognition 13 Quality Day
6. Holding the Gains	6 Training and retraining. 4 /end Price tags awards.	26 Designing the control process. 27 Provide the capable process. 28 Establish new operating standrds and procedures. 29 Train the operating forces.	24 Develop a control system for implemented policy deployment project, outline, and test. 25 Develop new operating procedures and guidelines. 26 Train the operating forces.	8 Quality Education.

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[1] Adapted from Voehl, Frank W. (1992). *Total Quality Printiples and Practices Within Organizations* (pp. 16 b,c,d)

Customer satisfaction

As illustrated in Figure 1, one of the few points that all TQ writers agree is that the core purpose of any quality improvement process is to ensure that the needs and reasonable expectations of the customer are satisfied. Any organization, public or private, service or manufacturing, will prosper when this occurs. Serving the customer is straightforward, i.e., identifying the customer (Who are our customers?), communicating with the customer and agreeing on their needs and reasonable expectations that are both desirable and possible (What do they want?), and designing the work process to be sure these requirements are met (What must we do to meet and even anticipate our customers' needs?).

To meet the expectations of the customer, many writers identify an *external customer* (the ultimate recipient of the organization's product or service), and an *internal customer* who is the next recipient of each unit's or team's service or product. Thus, while many do not directly serve the external customer, the attention to service to the unit's being served ultimately assures high quality productivity throughout the organization.

Continuing within the context of multiple customers, HRD has a number of customers for two basic services of HRD, instructional development and organizational development (Table 2). The *internal customers of instructional development* are the learners (teams and individual employees) needing appropriate knowledge, skills and abilities; departments needing continuous improvement and information; and instructors and/or consultants needing continuous learning both the product or service of the organization, and instructional delivery skills. The *internal customers of organizational development* are the executive officers who need consultation on the maximum utilization of organization's human resources, i.e. the HRD plan, and participation on the Quality Council; and the units of the organization who need assistance in the implementation of the HRD plan. Two external customers may exist for HRD: *Direct external customers* needing training and education in the organization's product or service (i.e., client education), and *indirect external customers* seeking guidance and education on the services developed by the HRD unit (e.g., Disney seminars, Saturn programs, etc.)

Continuous Improvement

Continuous improvement is both a commitment (continuous quality improvement or CQI), and a process (continuous process improvement or CPI). The Japanese word for this second pillar is *kaizen* and is, according to Imai (1986)[1], the single most important concept in Japanese management. The commitment to quality is initiated with a statement of dedication to a shared mission and vision, and the empowerment of everyone to incrementally move toward the vision. The process of improvement is through the initiation of small, short term projects and tasks that collectively are driven by the achievement of the long term vision and mission.

The application of continuous improvement within HRD consists of two components. The first is the application within instruction through the learning and practicing of appropriate processes, tools, and skills both within the instructional setting and back on the job. The second component is the utilization of continuous improvement in the design and delivery of instruction, i.e., the continuous improvement of instruction and learning.

The process for continuous improvement, first advanced many years ago by Shewhart, and implemented by Deming is plan, do, check, and act (PDCA), a never ending cycle of improvement that should occur in both the development and delivery of instruction. It is a cyclical, iterative process. The principal educational methodology is problem-centered instruction. While no rigid rules are required for carrying out the process, the general framework of each step can be described. *Plan*, asks such key questions as, what changes are needed, what are the needed results, what obstacles need to be overcome, are data available, and what new information is needed? *Do* is the implementation of a small scale change or pilot test (i.e., instruction and training) to provide data for answers. *Check* is the assessment and measurement of the effects of the change or test. *Act* first asks does the data confirm the intended plan, are other variables influencing the plan, are the risks of going on necessary and worthwhile? Then, based on these answers, the project or task is modified and moves

Table 2. The Customers of Human Resource Development

Customers	**Needs**
Internal Customers - Instructional Development	
Learners (Teams and	Knowledge, skills and abilities for organizational and personal goals; joy in learning
Programs/Departments	Continuous improvement, information exchange (input/output), cooperation, collaboration
Instructors/consultants	Continuous learning of the product/service, competence in instructional design and delivery
Internal Customers - Organizational Development	
Executive officers	Consultation and advisement, integration of the HRD plan within the strategic plan, participation on the Quality Council
Units/Departments, Divisions	Consultation and advisement, implementation of the HRD plan, information exchange (input/output), cooperation, collaboration.
External Customers - Direct	
Customers/clients	Training and education in using product or service
External customers - Indirect	
HRD Customers	Education on the HRD products and/or services developed by the HRD unit.into the *Plan* stage again, and the iteration continues, expanding knowledge and implementing further learning. Ideally, this process would continue indefinitely - during instruction and afterwards on the job.

Speaking with Facts

A variation of this third pillar or principle is management by fact, as its application goes beyond talking about it. Speaking or managing with facts means two things. First, objective data must be collected so that the information obtained is valid. Too often "data" is based on intuition, hunches, or influence. The second thing is the implementation of decisions based on the objective data, i.e., managing according to valid information, not according to instinct or preconceptions.

As in the discussion of previous pillars speaking with facts consists of two components - the collecting of data upon which HRD strategies are developed, and the utilization of factual information in the instructional process. Within HRD speaking or managing with facts entails the collection and analysis of valid data through various means before, during and following the instructional intervention. While the need for data collection is acknowledged, the process is often short circuited with programs being implemented with minimal justifiable data. The implementation of continuous improvement is the framework within which ongoing data can be collected. Questionnaire, interviews, focus groups, validated scales, benchmarking, and environmental scanning are all appropriate means of collecting data. Effective tools for analysis of the data are also available. Lewis and Smith (1994)[2] identify 21 tools, including the seven basic TQ tools (fishbone diagram, checksheet, control chart, histogram, pareto diagram, run charts, and scatter diagram).

The second component is the instructional process itself, where applicable data are obtained to determine the knowledge gained, and skills learned and applied. Similar to the first component, data should be collected before, during and following the training and instruction. Before the course or seminar specific data on needed knowledge, skills and attitudes should be gathered through questionnaires and guided interviews with the targeted learners and others who will be the recipients of the training delivered. During the training data on both concepts learned, and perceptions of the learning process should be continuously gathered and analyzed, and then shared with the learners. Of critical importance is the need for flexibility within the instructional process to modify the content and delivery to accurately reflect the instruction needed and desired by the learners. Following the course or seminar ongoing data should be gathered back on the job to validate the instruction within the context of improved productivity and positive attitudes about the organization and themselves. Representative examples of such techniques will be described in the following section.

Respect for People

Respect for people within total quality management/continuous quality improvement is the acknowledgment that, while people work *at* an organization, they work *for* themselves, trying to create a meaningful and satisfying life. Recognition of this by the organization results in a framework that includes, according to Lewis and Smith (1994):

a. Creating a sense of purpose in the workplace so that people are motivated to do their best.
b. Keeping people informed and involved, and show them how they are a part of the bigger picture.
c. Educating and developing people so that each individual is the best that he or she can be at what they do.
d. Helping people communicate well so they can do their jobs with peak effectiveness.
e. Delegating responsibility and authority downward so that people are not just "doing what I'm told," but are taking the initiative to try to make things work better.

Within the context of this paper, i.e. within human resource development, respect for people includes two groups of people - the learners (employees) and the instructional staff of the organization. While the learners are also recognized as customers, the respect, caring and support described above applies to learners. Creating an instructional environment that facilitates self-directed learning encourages respect for the learner.

Similarly, recognition and respect for the HRD staff can result in more effective learning experiences for the organization. Involvement in the strategic planning process, being asked to develop an organizational HRD plan, and being given the necessary resources to implement the plan, these all acknowledge the respect of the HRD staff, and in turn contributes to the productivity of the organization.

Application of the Four Pillars

A primary premise of this paper is, if an organization is incorporating the principles and practices of total quality management/continuous quality improvement (TQM/CQI), they must also implement within the education and training program the principles and practices of TQM/CQI. This can be done within the framework of the four principles or pillars, as described above. Thus, the question can be asked, what examples or illustrations are there, if any, of the instructional application of the four pillars?

The first instructional application was in two university courses taught by one of the authors. While the schedule was the traditional 15 week course meeting three hours each week, the content provided the opportunity to develop and apply the principles. One was an introductory course in human resouce development and adult education; the other was a course on implementation of total quality management. From these "pilot" efforts a number of strategies and activities were refined and are now being implemented in various

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organizations HRD program, e.g. a 20 session health care management course being conducted in area hospitals. Following are ten forms, activities and instructional strategies that reflect the four pillars.

1. A complete *Study Guide* for the course is prepared giving the objectives, session outline and schedule, and related materials and readings for each session.
2. A participant/learner background sheet is completed by each person, ideally prior to the first session or at the beginning of the first session. The data is summarized and an expanded class roster is distributed to everyone.
3. A bi-weekly feedback questionnaire is completed to determine the learners' perspective of the process, content, and pace of the course.
4. A *Quality Council* is created, consisting of a representative from each of the small groups that are formed near the beginning of the course. The Council, meeting every two weeks, provides feedback from the bi-weekly questionnaire their group members completed. From their input the course is modified to address areas (knowledge and/or skills) not adequately covered, to slow or advance the general pace of the content delivery, in general assure the needs of the learners are heard and acted on. Membership on the Council is rotated, the rotation determined by each group, in order to have multiple representation on the Council, and not overburden specific individuals with Council membership tasks throughout the course.
5. In the first or second session each person is asked to complete an *Individual Strategic Plan for Personal Continuous Quality Improvement*, a three page completion questionnaire asking each person to identify the kind of learning experience they like most/least, prepare a mission and vision statement, and relate how this course relates (or does not relate) to their mission and vision statement. These are reviewed by the instructor(s), with the course being adjusted as much as reasonably possible to accommodate the persons' expectations.
6. A variety of initial (first three sessions) small group activities are done with the small groups being formed both by the participants and by the instructor(s). The participant formed groups are done to observe both the processes (ease in forming small groups) and the product (e.g., do the same people always group together?). The instructor formed groups are structured to meet previously unknown people.
7. After approximately three sessions permanent groups are formed through a concensus process involving both the instructor and the participants, unless the participants were sent to the course as small groups. During this process a major part of one session is devoted to the meaning and purpose of teams, the difference between groups and teams, and the intent that the groups being formed will develop into teams.
8. Heavy emphasis throughout the course is placed on experiential exercises and participative activities through which the course content (knowledge) is examined and discussed, and desired skills are learned and practiced. For the most part, all exercises and activities are done within a small group format.
9. Use of case studies, both published case studies and cases drawn from the organization's experience are an integral part of the course to provide more realistic performance assessments, and assessments of employees' skills and knowledge (hopefully improved) back on the job by their supervisors. All case studies are done within a small group format.
10. Continuous feedback to each person and each team is provided throughout the course by other participants, and by the instructor(s). This is provided in the form of formal feedback, written and verbal, and informal encouraging and supportive comments. An example is the video taping of key presentations of teams, and the opportunity for feedback by the participants and instructor(s).

Conclusion

When the application of total quality, within the framework of the four pillars, is fully implemented, three outcomes occur. First, the entire course is highly experiential. The entire learning experience is designed to engage the learners in both the prepared activities, and the solicitation of the perceptions throughout the course. Adjustments are made to the course content and delivery based on the participants' collective input.

Second, within the context of the content the course is continuously focused on performance outcomes. The content determines the specificity of the behavioral performance following any learning experience. Specific performance is more readily observed for technical courses, e.g., developing computer skills, than for broader, less technical courses, e.g., health care management. Acknowledging this, the continuous focus on the implementation of the four pillars results in the extensive use of experiential learning, mentioned above, and continual feedback within the framework of the contents' application to work performance, both while the course is going on and after the course is concluded.

Third, this approach, when applied within organizations is not viewed as a separate entity, but within the systemic framework of the organization. While the content (knowledge and skills) is established, the determination of its delivery and the selection of the learners must be done within an overall plan (the HRD Plan) that complements the mission and vision of the organization. Performance technology and total quality management are co-advocates of "just-in-time" training to assure that training is both needed and will be favorably received.

A result of this entire process, this focus on respect for the customer, speaking only with facts, continuous improvement, and respect for persons, is that no two human resource development programs/activities are exactly the same. When the implementation of these four principles occur with the dynamic of an organization's mission and systemic framework, the instructional program must reflect both the immediate needs the learning experience is intended to fulfill, and contribute to the overall enhancement of the organizational environment, i.e., its culture.

Of import to the authors is this view of instructional development and learning within the context of evaluation. Presently, the principal components of evaluation are formative and summative evaluation. What is needed is to add to the framework of formative and summative evaluation the concept of "implementative" evaluation, or formative evaluation and revision during implementation that goes beyond one-to-one, small group, and field trial strategies. It is the hope of the authors that the approach to instructional development and delivery within organizations will also contribute to an expansion of the framework within which evaluation of instruction is viewed and applied.

1 . Imai, Masaaki (1986). *Kaizen: The Key to Japan's Competitive Success.* New York:Random House.

2 . Lewis, Ralph G, and Smith, Douglas H. (1994), *Total Quality in Higher Education.* Delray Beach, FL:St. Lucie Press, pp. 97-99.

Using 360-Degree Feedback to Evaluate Management Development: New Data, New Insights

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Managers in several organizations received 360-degree feedback using a standardized instrument prior to participation in a leadership development workshop, followed by individual developmental activities for up to two years, when 360-degree feedback was again provided. For the 73 individuals for whom data exist at both times, correlations among the four feedback groups (self, subordinates, peers, supervisors) were low, with the highest correlation being .40 and .29 at Times 1 and 2, both on self-subordinate comparisons. While 360-degree feedback provides multiple perspectives, its use in evaluating management development requires the appropriate context and examination of individual items against training content and objectives.

Kirkpatrick (1959a,b, 1960a,b) established four levels for the evaluation of training and development activities: Reaction, Learning, On-the-Job Behavior, and Organizational Impact. His approach has now become well-entrenched in the human resource development literature. For any one of the levels to have content validity, the operational definition of the level must be compatible with the objectives of the training. Level three, on-the-job behavior, has traditionally been measured through supervisory rating scales, similar to those used in performance appraisals, though perhaps more focused.

Supervisor ratings have limitations that challenge their validity and utility as a source for evaluating management development activities. One criticism of relying solely on the supervisor's rating is that the supervisor may have too few opportunities to observe the ratee's performance and, therefore, is not able to offer a valid rating. An alternative has been to use 360-degree feedback--the process of receiving perceptions of one's performance from a variety of sources, typically supervisor(s), peers, direct reports, self, and even customers--to measure on-the-job behavior.

Proposing an Alternative: Reasons for Using 360-Degree Feedback

While the use of 360-degree feedback is on the increase, such a "formalized program of feedback to managers from their constituents is in its infancy" (Hedge & Borman, in press). One source of motivation for the increased use of 360-degree feedback in human resource development is the increasing criticism directed toward the use of performance appraisal as a tool for development.

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Lawler (1995), for example, summarized the situation:

> The problem--and it is well-documented--is that most performance-appraisal systems do not motivate individuals nor guide their development effectively. Instead, they cause conflict between supervisors and subordinates and lead to dysfunctional behaviors. These dysfunctions often are exaggerated when performance appraisals are tied to traditional merit pay systems. They are particularly severe when the system forces supervisors to compare subordinates. (p. 29)

The argument often made for 360-degree feedback is that the administrative reasons for performance appraisals will not disappear, yet a system is needed that does not have the "rater errors, biases, and other inaccuracies" that detract from the ability of performance appraisals to guide development or the validity of the information they contain (Hedge & Borman, in press). Hedge and Borman (in press) identify three primary uses of 360-degree feedback in organizations:

- Making general personnel decisions, such as promotions and terminations,
- Identifying training and development needs, pinpointing employee skills and competencies that are currently inadequate but for which programs can be developed, and
- Serving as a criterion against which selection and development programs are validated.

The second use (identifying development needs) may be one of the most frequent applications of 360-degree feedback (Kam, Howard, Antman, Cohen & Coker, 1994; Van Velsor & Leslie, 1991). This paper discusses the use of a 360-degree feedback instrument designed to facilitate management development to evaluate the effectiveness of a training event, in this case, a management development program. This use is a version of the third use identified (and listed above) by Hedge and Borman (in press). The questions are, (1) How can a 360-degree feedback instrument be used to evaluate a management development program? and (2) What are the methodological limitations of applying 360-degree feedback in this manner?

Advantages of Peer, Subordinate, and Self Ratings

Researchers have outlined advantages associated with each perspective in the 360-degree feedback process. Further, there are perceived advantages to using the multiple inputs that occur in a 360-degree feedback process as compared with the singular input from a supervisor in the more traditional evaluation systems. Latham (1986) argued that the inclusion of peers, who are more likely to have daily interactions, improves ratings. Dunnette (1993) concluded that self descriptions possess accurate components and suggested that it is premature to presume that the ratings of others should always be used to assess the validity of self-ratings. Latham and Wexley (1981) argued for the use of self-ratings from a developmental perspective. They suggested that self-ratings force the employee to focus on what's expected in the job. Also, they allow the supervisor to see how subordinates perceive their level of effectiveness.

From a review of the literature, Pollack and Pollack (1994) provided several arguments in support of subordinate ratings:

> 1) they typically have frequent contact with the manager, giving them many opportunities to observe the manager's performance, 2) they see different behaviors than supervisors and peers, giving them a unique perspective on the manager's performance, and 3) several subordinates' ratings can be averaged to produce a more reliable assessment of the manager's performance. (p. 12)

Pollack and Pollack (1994) concluded that

> subordinates and peers provide a unique perspective on job performance that the supervisor of that employee may not have. The research literature also showed that subordinate and peer ratings are reliable and valid predictors of job performance. (p. 3)

Hazucha, Gebelein, Holt, and Olsen (1993), in an assessment of the psychometric properties of the PROFILOR™, a 360-degree feedback instrument developed by Personnel Decisions, Inc., concluded:

> 1. The more raters, from the more perspectives, the less likely the ratings are to be biased from one person's idiosyncrasies.
> 2. Raters should be people who have valuable observations to contribute based on their work with the person....people are likely to work most closely with their direct reports and their boss.
> 3. When possible, managers seeking feedback should choose raters whose perceptions are important (but not necessarily favorable) because the manager continues to rely on their cooperation.
> 4. We expect less-than-perfect agreement among raters because each has different goals and motivations and observes different behaviors. (pp. 29-30)

Disadvantages of Peer, Subordinate, and Self Ratings

There are, however, problems associated with the use of 360-degree feedback for training evaluation. While these problems may not be a serious issue when 360-degree feedback is used for development planning and may, in fact, help diagnose areas to emphasize during development, they pose problems when we attempt to use 360-degree feedback for other purposes (such as program evaluation or validation). One problem is in interpreting the ratings when the various groups doing the ratings provide different feedback. Which rating should predominate when they differ? Should the supervisor's rating predominate, as has been the case historically? Or should more attention be paid to the rating of those with whom the ratee has the greatest contact and, therefore, the most opportunity to observe the relevant behaviors? Or should the self-rating predominate, especially for developmental purposes, because it has the greatest potential for acceptance by the ratee?

McEvoy and Buller (1987) found that peer ratings are not well accepted by raters or ratees except when they are used for developmental purposes. On the other hand, Hedge and Borman (in press) concluded that self-ratings are "unreliable, biased, and inaccurate compared to other rating sources." Hedge and Borman (in press) also concluded that, "despite evidence that use of subordinate appraisal is on the increase, there is almost no empirical research to support upward appraisal for any purpose." They went on to argue that "the biggest potential problem with subordinate appraisals is the fear that supervisors will exact retribution if an honest, but unfavorable, appraisal is received." A recent study (Antonioni, in press) explored the "extent to which managers improved their supervisory behaviors as a result of receiving and reviewing written upward appraisal reports (feedback) with their immediate supervisors." He found that there were no differences between "managers who receive feedback with or without a performance review" and those "managers who did not receive feedback." In fact, "mean supervisory behaviors scores were lower at time two than at time one."

Other psychometric issues regarding multiple ratings include leniency tendencies, divergent and discriminant validity, and halo of self, peer, and supervisory ratings. Through a meta-analysis of the literature, Kraiger (1986) concluded, first, that, "while there is a slight leniency effect for self ratings, the effect is not so large that it would cause severe range restriction problems in validation analyses" (p. 10). Further, since no external criteria were used in any of the studies reviewed, he concluded, second, that "any of the three sources would be equally well suited for validation...[though] all three may be good or all three may be bad" (p. 10). Finally, "peer and supervisory ratings may be more prone to halo than self ratings, but again the size of the effect is not so large that it would be a problem in validation studies, particularly when rating dimensions are combined into a single overall criterion" (p. 10). Kraiger (1986) noted, as part of the study cited earlier, that "the lack of discriminant validity in all three sources [peer, self, supervisors] revealed by the multitrait-multirater analysis would argue for the formation of composites in most instances" (pp. 10-11). "Convergent validity appears greatest between peer and supervisory ratings. Self ratings typically show a higher mean than peer or supervisory ratings which in turn are nearly equal" (p. 11).

Using 360-Degree Feedback to Evaluate Management Development

Since many 360-degree feedback instruments cover managerial skills (Van Velsor & Leslie, 1991), a natural progression to using ratings at two time periods on these instruments for program evaluation appears warranted. One such study, in which the development activities were directly related to skills and behaviors measured via 360-degree feedback, was conducted by Hazucha, Hezlett, and Schneider (1993). They investigated

> changes in the skill levels of managers which occurred two years following the managers' participation in 360-degree feedback. The major objective was to investigate how skill development, development efforts, and environmental support for development are related. The Management Skills Profile (MSP) was used to measure skills and to give feedback. Of the original 198 managers who received feedback, 48 accepted the opportunity to complete the instrument again two years later. (p. 325)

Participants' skills increased during the two years, and self-other agreement was greater at Time 2 than at Time 1. Those with greater skill at Time 1 were more likely to have advanced. While providing evaluative information, the change in scores at Time 2 are not clearly as a result of either having received feedback at Time 1, having received the training provided at Time 1, nor the developmental activities that occurred between Time 1 and Time 2.

Unfortunately, problems may arise when using 360-degree feedback, or any behavioral ratings, to imply that changes occurred due to management development activities or any OD-type intervention. The first problem arises because of our dependence on consistent or convergent information from the sources we use as raters. Kraiger (1986) found correlations between perspectives on five dimensions (interpersonal skills, personal qualities, job aptitude, leadership and instruction, and level of performance) using various rating scales were greatest between peers and supervisors, but these ranged only from .32 to .52. Between self and supervisor, the correlations ranged from .16 to .30, and self-peer correlations ranged from .06 to .30. Clearly, interperspective reliability is low. Williams and Levy's (1992) research supported some of these findings. The correlation between self- and supervisor ratings was .26, and the self-ratings showed greater leniency than did the supervisors' ratings. Hazucha, Szymanski, and Birkeland (1992) found self-supervisor correlations on 19 managerial dimensions ranging between .16 (Personal Adaptability) and .50 (Financial and Quantitative), with most of the correlations in the .2-.3 range. Finally, in another meta-analysis, Harris and Schaubroeck (1988) found peer-supervisor ratings to be correlated at .62, with self-supervisor ratings at .35 and self-peer at .36. As all of these studies indicated, interperspective reliability ranges from .06 to .62, indicating, at best, a modest level of agreement among perspectives on a manager's performance. This study is an investigation of the degree of interperspective reliability as a limit to evaluating a training program.

Methodology

The participants in the study reported in this presentation were individuals who had completed (or participated in) a week-long leadership training program at Personnel Decisions, Inc. during a period from 1984 to 1991. The training program was the Leadership Development Program (LDP), "an intensive 6-day training program developed by the Center for Creative Leadership in Greensboro, North Carolina" (Personnel Decisions, Inc., 1993, p. 1). The workshop is promoted as an opportunity to build leadership skills through leaderless group exercises, lecture, and feedback on test and job performance. Prior to the workshop, all participants completed the Management Skills Profile (MSP), a 122-item inventory designed to assess skills and identify development needs across 19 managerial dimensions (see Table 1). This is the same instrument used in Hazucha, Szymanski, and Birkeland (1992) and Hazucha, Hezlett, and Schneider (1993).

Table 1
Management Skills Profile Dimensions and Definitions (Hazucha, Szymanski, & Birkeland, 1992, p. 6)

Dimension	Definition
Planning	Setting goals and developing strategies and schedules for meeting those goals; anticipating obstacles and defining alternative strategies
Organizing	Scheduling and coordinating work of others; setting priorities; establishing efficient work procedures to meet objectives
Personal Organization & Time Management	Allocating one's own time efficiently; arranging information systematically and processing paperwork and other information effectively without getting bogged down in detail
Informing	Letting people know of decisions, changes, and other relevant information on a timely basis.
Oral Communication	Speaking effectively one to one and in groups; making effective presentations
Listening	Demonstrating attention to, and conveying understanding of, the comments or questions of others
Written Communication	Writing clearly and effectively; using appropriate style, grammar and tone, in informal and formal business communications
Problem Analysis & Decision Making	Identifying problems; recognizing symptoms, causes and alternative solutions, making timely, sound decisions even under conditions of risk and uncertainty
Financial & Quantitative	Drawing accurate conclusions from financial and numerical material and applying financial principles and numerical techniques to management problems
Human Relations	Developing and maintaining smooth, cooperative working relationships with peers, subordinates, and superiors; showing awareness of, and consideration for, the opinions and feelings of others.

Conflict Management	Bringing conflict or dissent into the open and using it productively to enhance the quality of decisions, arriving at constructive solutions while maintaining positive working relationships
Leadership Style & Influence	Taking charge and initiating actions, directing the activities of individuals and groups toward the accomplishment of meaningful goals and commanding the attention and respect of others
Motivating Others	Creating an environment in which subordinates and others are rewarded for accomplishment of group and individual goals
Delegating & Controlling	Clearly assigning responsibilities and tasks to others and establishing effective controls, ensuring that employees have the necessary resources and authority, and monitoring progress and exercising control.
Coaching & Developing	Evaluating employees, providing performance feedback, and facilitating professional growth
Personal Motivation	Displaying a high energy level, working long and hard to get things done, and seeking increased responsibility on the job
Personal Adaptability	Responding appropriately and competently to the demands of work challenges when confronted with changes, ambiguity, and adversity, or other pressures
Occupational & Technical Knowledge	Applying the knowledge and skills needed to do the job, including technical competence in one's own field and familiarity with policies and practices of the organization and the industry
Results Orientation	Producing high quality work, managing productively, getting results

The MSP, developed in 1984 by Personnel Decisions, Inc., is completed by the manager being assessed, and also by his or her immediate superiors, subordinates, and peers. Holt and Hazucha (1991) reported on a number of studies supporting the reliability and validity of the instrument. Longitudinal studies over a period of one to two years, with different raters, showed reliability in the .5-.6 range for non-self ratings, and from .36 to .66 for self-ratings--a result somewhat lower than those found for personality scales, as would be expected because of the types of skills and behaviors measured by the MSP. Internal consistency reliability (assessed using Cronbach's alpha) ranged from .70 to .91 across the 19 scales, with an average of .83. Finally, interrater correlations for pairs of supervisor raters ranged from .30 to .52; for subordinates, .28-.48; and for peers, from .21-.37. Average interrater reliability ranged from .28-.47. "These correlations between pairs of raters translate to an average reliability of .74 for the standard composite of 7 raters" (p. 9). Validity was originally established through content analysis. Subsequent criterion validity has been shown in a number of studies relating MSP results to performance and/or organizational level. In the current study, overall Cronbach alphas were extremely high, ranging from .96 to .99, affirming the strong internal consistency of the MSP.

Participants were primarily those who had enrolled in public offerings of the program. A small number of participants attended the program during deliveries of the training at single organizations. LDP is a feedback-intensive training program intended to promote self-insight. It contains psychological assessment, lecture, and exercises. A follow-up study was designed and carried out as an evaluation at both levels 1 and 3 (Personnel Decisions, Inc., 1993).

> The LDP Follow-up Survey asked [managers] about a range of topics...their assessment of the LDP program, and to tell us about themselves, their organizations, and their coworkers in light of management development. To obtain the managers' overall reaction to the program, we asked them to give an overall assessment of the program's value and impact, as well as to assess the value of specific components of the program. (Personnel Decisions, Inc., 1993, p. 1)

Managers were also asked to provide estimates of their skill change using a scale of 1-5 (Not at All, to A Very Great Extent).

The surveys were mailed out to all participants who had attended LDP at least one year before the study began. The intention was to ensure that participants would have had a reasonable amount of time back on the job to make a considered assessment of their experiences in the program. Two organizations who had sent a large number of employees to in-house presentations of the program declined to participate in the study because they were planning similar follow-up activities. Surveys were sent out with a cover letter by PDI's Vice President of Training and Development.

Respondents who completed the survey and returned it within the specified time frame were given the opportunity to take the MSP again at no charge. Of the 317 respondents to the survey, 190 asked to retake the MSP. Of these, complete Time 1 data were available for 168 managers, and complete Time 2 data were available for 80 managers. Matched Time 1-Time 2 MSP data were available for 73 managers; the findings are based on the results of these 73 participants.

Findings and Discussion

In general, the 317 responding managers

> continued to have a favorable opinion of the program. The element of the program they found most valuable was feedback....These 317 managers clearly value LDP and rank it as one of the best training programs and on par with special assignments, mentoring, and feedback as having a strong positive impact on their career. (Personnel Decisions, Inc., 1993, p. 16)

Participants said that LDP helped them be more effective (3.5), give feedback to others (3.4), be somewhat successful in implementing skills learned at LDP (3.0). Direct change estimate was 3.5. When asked how their participation in LDP influenced their career, 70.7% of respondents indicated that it had had a "positive influence," while 13.7% indicated a "strong positive influence" (p. 2). Further, from 11 possible sources of contributors to "recent career progress," the LDP experience was rated highest, an unusual situation as "most frequently managers do not rate training as a major contributor to career success" (p. 3). Self-assessment, then, was that the LDP was a success.

Several limitations in the data exist, however, restricting the statistical analyses that can be conducted. The number of participants in the final data set was low compared with the number of initial participants in the program, and the data sets for the surveys returned in the follow-up were incomplete. The number of respondents compared with the number of intervening variables reduced the power of the statistical analyses. Perhaps most important, the MSP is a measure of behaviors, whereas the thrust of the LDP was in developing feedback seeking and application, behaviors not directly measured by the MSP.

In spite of these limitations, it was still possible to look at the data for insight into the question of using 360-degree feedback for evaluating management development activities. Interperspective reliability was examined at both times when the MSP was administered.

Correlations Across Rating Groups. Correlations by MSP dimension were run among the four rating groups at both rating times to compare interperspective correlations. This analysis yielded 114 correlations for each time, for a total of 228 correlations. Given the number of correlations calculated and the low correlation required for statistical significance, the more critical question for analysis has to do with practical rather than statistical significance. That is, a correlation of only .30 is statistically significant at the .01 level, yet the actual relationship explained is low. A review of all correlations calculated revealed that the highest correlation obtained for Time 1 was .40, a level generally considered to be low. For Time 2, the highest correlation was even lower at .29. The highest correlations in each of the ratings group comparisons are shown in Table 2. These results are in the mid-range of interperspective reliability found by Kraiger (1986), Hazucha, Szymanski, and Birkeland (1992), and Williams and Levy (1992). They are at the low range of those found in Harris and Schaubroeck's (1988) meta-analysis.

Table 2
Highest Correlation within Each Ratings Group Comparison at Time 1/Time 2

Group	Self	Peer	Subordinate
Peer	.24/.08		
Subordinate	.40/.29	-.23/.12	
Supervisor	.36/-.15	.28/.21	.22/.20

The correlations show clearly that there is very little relationship among the various groups in terms of how they completed the MSP. The perspective of each group is very different, and each group appears to view performance in each of the 19 dimensions in a different way from the other groups. The Time 1 self-other findings are consistent with those of Peterson (1992), though the peer-supervisor relationship is considerably lower than the .62 found by Peterson. Time 2 correlations are consistently lower. In his review of the literature, Peterson concluded that

> the relationship between self-ratings and observer ratings finds that self (S) and observer (O) ratings on many individual difference variables--whether personality, ability, or work performance--show moderate agreement at best. Typically, this lack of correspondence is viewed as a problem. Another explanation, however, is that we should *expect* systematic differences (Tellegen, 1985). Simply put, S and O have access to different information regarding a target's behavior. (p. 2)

Further, since any evaluation of performance is subjective (as underscored by Scholtes (1990), changing the players doing the evaluations may lead to different ratings, even if no change occurs. The low correlations found across all dimensions within each of the groups add considerable weight to the argument that any such evaluative rating will have low reliability.

The low correlations among the rating groups underscore the difficulty of deciding whose perspective to use in evaluating the training program. This same question must be raised for other applications of 360-degree feedback, as well. For developmental purposes, it is helpful to be able to view one's own performance from the perspective of several groups. But when a decision needs to be made, such as evaluating a developmental activity or making an administrative decision (pay, promotion), varied and contradictory evidence creates confusion rather than options. Guidelines are needed to determine the most valid source for a particular dimension, behavior, or application.

Earlier in this paper, we mentioned problems with using 360-degree feedback to evaluate training programs due to the potential for low reliability and convergence between rating sources, a finding replicated in this study. Another limitation of the typical 360-degree feedback instrument and other direct ratings of individual performance arises from the methods needed to translate these "snapshots" of performance or static ratings into measures of a dynamic entity such as change.

These observations are similar to those outlined by Peterson (1993) in his presentation of the results of a longitudinal study investigating behavior change in an individualized coaching program. Peterson found that people with different perspectives (such as the boss, participant, and coach) varied in the amount of change they observed on a measure similar to 360-degree feedback instruments but showed much greater agreement when they were asked to rate directly the amount of change they observed in the participants (Peterson, 1993). Peterson explained these results in the context of alpha, beta, and gamma change provided by Golembiewski, Billingsley, and Yeager (1975).

Golembiewski et al. provided the following definitions: "Alpha Change involves a variation in the level of some existential state, given a constantly calibrated measuring instrument related to a constant conceptual domain" (p. 134).

Alpha change is the type of change we hope for in a developmental activity, where the behavior is directly affected by an intervention. In contrast, "Beta Changes involve the recalibration of the intervals used to measure some stable dimension of psychological space, as in preintervention vs. post-intervention responses" (Golembiewski et al., p. 135), and "Gamma Change...involves the basic redefinition of the relevant psychological space as a consequence of an OD intervention" (p. 137).

Beta change occurs when the intervention increases or decreases rating biases affecting the scale intervals, such as leniency, stringency, etc. Gamma change is reflected by a new understanding of the norms against which ratings are made, or by learning about the expectations of others. It is quite possible for beta and gamma changes to keep us from observing alpha changes when we simply compare ratings given at two points in time. Peterson's "retrospective degree of change rating" (Peterson, 1993, p. 2) is one tool to get around these potentially conflicting types of change.

Conclusions and Recommendations

While the desire to obtain level-3 evaluation of a training intervention in Kirkpatrick's model is important and valid, the use of 360-degree feedback, in its current state of development, has limitations for evaluating the training program described here. The use of 360-degree feedback seems well established when used for individual developmental purposes. Trying to use it for evaluative or administrative purposes reflects the frustration of those who continue to work at improving performance appraisal systems at an organizational level instead of recognizing the inherent deficiencies in the system itself. The challenge to human resource development, then, is to determine explicitly the outcomes that are expected from management development activities and design a program evaluation system that responds specifically to these outcomes. Further, given the context-specific nature of performance feedback, it may be essential to view evaluation on an organization-specific basis, thus avoiding commingling of organizations in evaluation research. Another future direction for research is to establish within organizations the most valid sources for various skill or performance dimensions. In summary, 360-degree feedback needs to be applied very cautiously as a tool to evaluate training programs.

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Extending Leadership Development Beyond the Classroom: Looking at Process and Outcomes

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This study examines an innovative leadership development program (LeaderLab®) which focuses on the integration of learning and work. Critical design features are examined along with the atypical action-planning process used in the program. The role of turbulence in the implementation of action plans back home is also explored. Two outcome measures were employed: a multi-rater "change questionnaire" and multiple-source, post-program interviews. Findings reveal the program is having significant, positive impact.

Organizations are experimenting with ways to integrate work and learning for executives through developmental assignments (Lombardo & Eichinger, 1989), developmental relationships (McCauley & Young, 1993), action-learning groups (Dixon, 1993), and training which is relevant to the current leadership situation (Burnside & Guthrie, 1992). However, little is known about how the executives experience an integrative program, what facilitates the integration, and what outcomes occur.

This study partially addresses the lack of knowledge by examining an innovative leadership development program, LeaderLab®, offered by the Center for Creative Leadership. The program goal is: To encourage and enable leaders to take more effective action in their leadership situation. With its emphasis on action, the program encourages integrating learning with the actual leadership situation from work. One of the guiding principles of the program is that intervention over time ensures lasting behavioral change.

LeaderLab® is a six-month program with two separate weeks of classroom activity. Mid-level managers from a variety of organizations apply to the program and are then selected based on several criteria, including the intent to produce diversity in the participant group. For pre-work, participants complete numerous self-assessments, have coworkers fill out 360 degree instruments, and do an audit of their current work situation. Each participant is contacted before the program starts by a process advisor who will serve as his or her personal coach over the six months of the program.

The program begins with six days at CCL during which participants receive feedback on their instrumentation, meet with their process advisor, learn from lectures and discussions, and engage in a number of experiential and non-traditional learning activities such as the "Acting Leader." They develop relationships with change partners within the participant group who provide support and with whom they process what they are learning. The action-planning process takes participants through several steps that include guided visualization and development of a written plan for action. After their initial six days, participants return to work for three months and implement the plan they have developed for taking more effective leadership action. Each keeps a learning journal which is used for reflection and for communication with the process advisor. Participants establish a second set of change partners in their worksite who provide support and feedback for the changes they are working on. Process advisors contact participants by phone at least once each month to support and challenge their efforts to become more effective. After three months, the participants return to CCL for four days to process their learning and again participate in various classroom activities. They again spend time with the process advisor and revise their action plans, now taking into account what has been learned in the first three months. At the end of the second session

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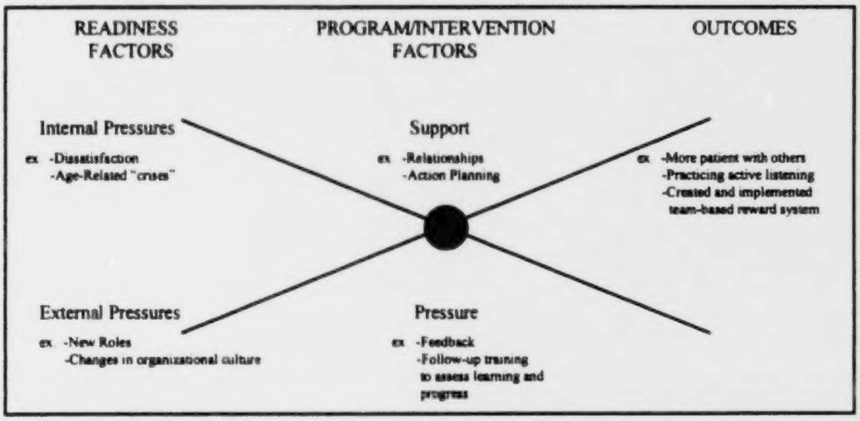
participants again return to their work to implement their revised plan during the two-and-a-half remaining months of the program. They continue to engage in journal writing, interact with their worksite change partners, and talk with the process advisor as a way to reflect on their actions and garner support. The program ends after six months with an in-depth written summary of the experience and a final conversation with the process advisor. An annual network meeting of all program alumni is held to provide opportunity for continued support and learning.

Theoretical Framework

This study draws on several theoretical frameworks. One is the theoretical frame of action learning (Argyris, 1985; Dixon, 1994; Revans, 1983) which posits real-world action as a valuable source of knowledge about self, and conversely, views organizational change as a manifestation of individual growth and development. Closely related is the theoretical frame of learning from experience (Bunker & Webb, 1992) which explicates the relationship between challenging/stressful experiences and learning. A third framework is a leadership development model based on work at CCL (Palus & Drath, in press; Young, 1993). This model has three components: readiness for development, factors involved in program intervention, and outcomes. Figure 1 below depicts a simplified version of the model with examples of each component.

Figure 1.


READINESS FACTORS
PROGRAM/INTERVENTION FACTORS
OUTCOMES
Internal Pressures
ex -Dissatisfaction
-Age-Related "crises"
Support
ex -Relationships
-Action Planning
ex -More patient with others
-Practicing active listening
-Created and implemented team-based reward system
External Pressures
ex -New Roles
-Changes in organizational culture
Pressure
ex -Feedback
-Follow-up training to assess learning and progress

The action-learning framework has been incorporated into the design of LeaderLab® by spreading the program over time and providing opportunities for training, implementation back on the job, and reflective tools and processes to distill learning. The program emphasizes challenging/stretching experiences both in the classroom and in action planning for back home implementation. In the classroom, participants experience non-traditional training activities (acting, artistic work, etc.), feedback (including 360-degree instruments), and diverse perspectives from both staff and each other. In the action-planning portion of the program, participants are encouraged to work on challenging/stretching behaviors which, though difficult, may increase their effectiveness. Finally, we have used the above-referenced leadership development model to help us make sense of the evaluation data we collected around LeaderLab®, particularly the critical program features.

Research Questions

- What are the critical design features of a leadership development program which strives to integrate work and learning?
- What do we know about participants' on-going experimentation as they integrate action, learning, and change?
- What outcomes result from a leadership development program that integrates work and learning?

Methodology

The sample consisted of 51 executives who attended one of three LeaderLab® runs between March, 1992, and February, 1993. Of the 51, two were dropped because they were CCL staff members; one person did not complete the program; and 11 participants did not participate in any of the data collection. Thirty-seven participants completed some part of the data collection. Therefore, our data analysis is based on subgroups of the 37 and varies according to the research question addressed. The group of 37 was primarily male (77%) and Caucasian (89%) with an average age of 43 (range 32-55). Over half (57%) of the group had a masters degree or Ph.D and tended to hold positions relatively high in the organizational hierarchy (46% upper-middle managers; 27% executive level; and 13.5% CEO level). The largest percentage (57%) were employed by private businesses, while 16% worked in either education or government. Forty-six percent of the sample were administrators; the rest of the group were widely diverse in their work roles.

Our data collection for the first research question consisted of participant phone interviews regarding program features. We interviewed 32 participants, 3-4 months post-program. Table 1 details which program features we asked about and the two questions we posed about each.

Table 1.

Program Features	Questions from Interview Protocol
Process Advisors Program Structure Action Planning Diversity of Group Artistic Activities Nature Walk Acting Class Journaling Visioning Change Partners Group Sculpting	· Was the (program feature) helpful in enabling you to take more effective action? If so, how? · On a 1 to 10 scale, how would you rate the (program feature) in terms of its helping you reach your goals?

Two researchers content-analyzed the responses to each open-ended question. The participants' quantitative ratings were averaged and the program features ranked in descending order.

The quantitative outcome measure was a "Change Questionnaire" developed specifically for this study which utilized a retrospective methodology (Howard & Dailey, 1979). We developed the questionnaire by collecting open-ended data from participants and raters concerning changes the participants were making during the program. We content-analyzed the data and developed broad categories of change. Items were written for the categories and piloted with program alumni. Revisions were made to the items and categories based on the results. The Change Questionnaire used in the study contained 92 items which were clustered into 14 scales. Table 2 contains a list of the scales and their alphas.

Table 2. Alphas for LeaderLab® Impact Questionnaire Rater Data Only

	Alphas for Difference Data	
Scale Name	*Alpha*	*N*
Balance	.79	105
Climate	.57	110
Composure	.66	109
Facilitating Communication	.74	106
Seeking Feedback	.73	106
Flexibility	.55	109
Listening	.78	111
Organizational Systems	.65	108
Self-Assessment	.76	109
Self-Confidence	.63	110
Sense of Purpose	.40	107
Subordinate Development	.76	106
Trade-Offs	.67	109
Treatment of Others	.88	107

Participants and their raters were asked to respond to the 92 items in two ways: 1) Circle the number which best describes the person one year ago; 2) circle the number that best describes the person today. A 9-point rating scale was used with the following anchors: 1 = Not at all; 3 = To a small extent; 5 = To a moderate extent; 7 = To a great extent 9 = To a very large extent.

The Change Questionnaire was distributed post-program. All raters were guaranteed confidentiality and no feedback results were given to the participants (this was clearly pointed out before they participated). Both participants and their raters returned the questionnaires directly to us. We had 29 participants with useable data. We also administered the Change Questionnaire to a matched sample control group which consisted of individuals who had been accepted into the program but had not yet attended (n=40). By comparing the change scores of the two groups we determined whether or not those who completed the program were perceived as making significantly more change than the control group.

Our first analysis used the data of only the participants who completed LeaderLab® to determine if they had made significant changes in their behavior. We first computed mean difference scores using rater data only for each scale. We then computed paired t-tests for each scale to determine if the differences were significantly greater than zero by chance alone. In order to account for the increased potential of Type I errors (we computed multiple t-tests), we adjusted our significance level to .01 instead of .05. Next, we computed mean difference scores (again using only rater data) for the control group. We then computed matched sample t-tests comparing the difference scores of the two groups on each scale. Again, we used .01 as our significance level, not .05.

Our qualitative outcome data consisted of phone interviews conducted with 27 participants, their co-workers and process advisors. The interviews were conducted 3-4 months after completion of LeaderLab®. The focus of the interviews was on the implementation of action plans back on the job based on the written action plan from the 2nd week of training at CCL. We also asked exploratory questions regarding the action-planning process as well. Table 3 displays examples of the types of the questions asked of each source.

Table 3.

Selected Questions for Co-workers and Process Advisor
• What specific actions is (participant) currently taking to be more effective in her leadership situation? • What enabled her to take these actions? • (Refer to action plan) What progress did (participant) make on her action plan? (Read each action) What evidence do you have of this progress?

Selected Questions for Process Advisor
• Was there any evidence that the action plan changed over time? If so, what do you think caused the change? • What other progress did you observe the participant making over the course of the program? What evidence did you have of this progress?

Selected Questions for Participant
• In the program you committed to a set of actions. What have you accomplished with respect to these actions? • What specific actions are you taking now to be more effective in your leadership situation on a personal, group, and systems level? • Has your action plan changed over time, and if so, what caused it to change?

Two researchers were involved in content analyzing the types of actions/outcomes reported in the interview data. We first made a master list of all actions/outcomes reported when at *least two* of the sources mentioned it. Then we developed categories of the actions and coded the list. (We are currently having other raters code the data to see how closely they replicate our system.) Three researchers were involved in further exploration of the interview data regarding the action planning process used in LeaderLab®.

Results

What are the Critical Design Features of a Leadership Development Program Which Strives to Integrate Work and Learning? The results of our content analysis of the participant interviews regarding program features showed two key contributors to the success of the program: process advisors and program structure (intervening over time). These two features received the highest overall ratings (process advisor = 8.9; program structure = 8.2) and extremely favorable reviews by participants as key to their taking more effective action back on the job. Participants reported that process advisors played a variety of roles: Expert, Dialogue Partner, Accountant, Positive Reinforcer/Encourager, Feedback Provider, and Counselor. For further discussion of these roles see McCauley et. al. (1993). In addition, the process advisor's perceived objectivity and acceptance/positive regard for the participant seem to be critical ingredients of successful relationships. Thirty one of the 32 participants we interviewed in this part of the study thought that the program structure had the right time distribution, with the split training weeks and time for implementation of action plans back on the job spread over the six months. These findings are consistent with results from earlier data collections around program effectiveness. However, our current findings are perhaps more impressive than earlier results because the data were collected 3-4 months after participants completed LeaderLab®. We have found that ratings gradually decrease over time (Young, 1993), so it is striking that these two features of the program continue to be perceived as highly impactful.

Also helpful to participants are the action-planning (rating=7.8) and artistic activities (rating=7.1) used in the program. The most helpful thing about action planning is the structure and organization it provides participants as they plan next steps towards achieving their vision back on the job. The artistic activities in the program include a "touchstone" exercise in which participants construct a personally meaningful object out of natural materials. Briefly, the touchstone is a symbolic representation of the LeaderLab® experience; it helps participants express their own metaphor or vision of change in a non-verbal way (DeCiantis, in press). It is a "living" reminder of the program. This exercise is stretching for many participants, but generally perceived as very valuable and meaningful by helping them express their vision and get in touch with their emotions. It is one of the more non-traditional aspects of the training experience at CCL.

What Do We Know About Participants On-Going Experimentation as They Integrate Action, Learning and Change? During LeaderLab®, participants implemented action plans within the context of a great deal of personal- and work-related turbulence. The researchers were astonished at the amount of turbulence reported, particularly since we did not ask specifically about this in the interview protocol. The description of the turbulence often came as an explanation for why actions from the written plans had not been carried out or had taken an unanticipated direction. Had participants been asked more directly, we may have seen more turbulence reported. Turbulence was reported for 19 out of the subsample of 27 participants.

We can operationally define turbulence as unanticipated occurrences that command the attention of the participant and are typically stressful situations. Turbulence was frequently, but not always, experienced negatively. The turbulence reported in this study can be grouped into four broad categories: systemic, job/task, personal, and psychological.

Systemic turbulence involved such occurrences as downsizing, reorganization, and the replacement of senior management. Participants, themselves, appeared to have little impact on such occurrences, although they were greatly affected by them. Generally, participants in these situations focused on personal goals, not group or systemic goals. Nine participants reported some kind of systemic turbulence.

Occurrences in the job/task category include taking a new job within the same company, sometimes as a result of systemic changes; taking a job in a new organization; job loss, again, often due to a systemic change; and moving between line and staff positions. Twelve participants reported this type of turbulence.

Occurrences in the personal category happened outside of the workplace, yet greatly affected how participants functioned at work. They included such events as personal health problems or that of family members; loss of a close relationship through separation or death; and the instigation of new relationships or resumption of a former one. Eight participants reported events in this category of turbulence.

Occurrences in the psychological category tended to be long-standing problems such as alcholism, depression, and chemical imbalances. In some cases the participant was learning to deal with an issue in a new way; in other cases the participant gained new insight into the impact of the problem on their work. Four participants reported turbulence in this area.

The turbulence manifested in these four categories clearly had an impact on participants' ability to carry out their action plans. However, the nature of that impact is less apparent in our data. In most cases the turbulence, even when it was negative, did not seem to prevent participants from making progress in some areas, although the turbulence did appear to influence which areas were focused on. It is unclear that the turbulence always fostered learning, although for some participants it seemed to do so. This preliminary finding is consistent with earlier LeaderLab® research in which individuals who participated as case studies for the formative research were found to have been more motivated when there were pressures/turbulence present in their lives. The program seemed to have greater impact on participants with a moderate amount of turbulence and pressure (Young, 1993).

In further exploring the question of how participants experiment with integrating action, learning and change we found evidence in the interview data that participants approached implementation of action planning from three different models: goal focus, vision focus, and process focus.

The first model, or goal focus, is reflective of the way action plans are most commonly referenced in the literature: goals to be attained. These respondents answered questions as though the action-planning was a blueprint for specific actions. In other words, they tended to take the action planning process quite literally. Rarely were there reports of actions beyond the specific steps they committed to on paper in the program.

In the second model, vision focus, the respondents seemed to view the items on the action plan as beginning steps for a more extensive plan. They regarded the individual items they had written into the action plan as a kind of tip-of-the-iceberg. The "iceberg" itself included the vision the participant had created during the program. The participant seemed to carry a mental image of an ideal state (vision) they were working towards, more than specific items written on the plan. Their actions often took advantage of, or responded to, opportunities that occurred in their environment. Thus, actions definitely changed, and in some cases, the vision seemed to evolve as well. This model seemed to be the most prevalent among participants in this study.

The third model was more process focused--how to conduct work. Participants viewed action planning as an ongoing process that involves acting, reflecting, and revising actions. They tended to use their action plan as a way to communicate with others about what they were trying to accomplish or do differently. Some participants talked about using the action-planning process and, in some cases, the material from LeaderLab® with their teams to work towards a shared vision. From this perspective, the initial steps written on paper were viewed as just an iteration of a process that would continually evolve. Thus, anything written on paper would be "old news" within a short period of time, given the dynamic and ever-changing environment these leaders were operating within.

All of the participants in LeaderLab® went through the same process in developing their action plans, so how might we account for the variation in the meaning the respondents assigned to the process? Several possibilities suggest themselves: 1) The program took a process perspective by having participants construct a plan in the first training week at CCL - implement the plan for three months back on the job - return to CCL and revise the action plan - implement again for two and half months back on the job. This process orientation was further enhanced by the process advisor relationship over the six months to help the participant reflect on what she was learning and revise actions accordingly. Thus, the program emphasizes a dynamic view of action planning; 2) Participants were encouraged to construct action plans which were meaningful and useful to them in their individual situation; 3) Participants in LeaderLab® had typically had other leadership development experiences which probably emphasized a more traditional "goal-focus" model of action planning. They may have carried this framework over into the LeaderLab® Program.

Although exploratory, this part of the study provides data on how action planning may work in actuality. These data challenge the way leadership and management-development professionals have typically viewed and presented action planning to their participants. It has most often been framed from the goal-attainment model, assuming that an action plan functions like a road map to get the participant from point A to point B. These data suggest that for many participants action plans are much more dynamic. This preliminary finding is congruent with recent work by Mitchell and Wood (1994) who point out that, "Managerial work is characterized by complex causal paths, socially mediated outcomes, dynamic, evolving tasks, and multiple time frames. These characteristics make the application of goal setting theory to managerial work more complex than simply setting specific, challenging goals." (p.3)

One implication for multiple models of action planning is the difficulty this presents for program evaluation. The goal-focus model is far easier to assess by simply checking off a yes or no for each action committed to on paper. The vision focus and process focus models are more dynamic and complex. In our own analysis strategy, we decided to forgo the typical goal-focus model of measuring progress. Thus, we developed the list of *all* actions reported by at least two sources, rather than focusing only on what participants committed to on paper in the program.

What Outcomes Result From a Leadership Development Program that Integrates Work and Learning? Following are the results of the change questionnaire and interview data analyses.

Change Questionnaire. Table 4 presents mean change scores (rater data only) by scale for both the group who completed LeaderLab® and the control group which had not yet attended the program and the results of our t-tests. Asterisks in the second column indicate significant change for the group who completed LeaderLab®. The fourth column displays t values computed to test the difference between the means of the two groups. Asterisks indicate significance levels. First, based on the rater data, the group which completed LeaderLab® was perceived as having made significant, positive change on every scale. Second, all significant differences between the two groups indicate that the group who *completed* LeaderLab® were perceived as having made more change than the control group. On 11 of the 14 scales, the group who completed the program had significantly higher mean change scores.

Table 4. Mean Change Scores

Scale	Mean Change Group That Completed LeaderLab®	Mean Change Control Group	t Value
Self-Assessment	1.04***	0.47	-4.33***
Seeing Feedback	0.88***	0.52	-2.75*
Organizational Systems	0.74***	0.41	-3.89**
Treatment of Others	0.73***	0.30	-3.77**
Facilitating Communication	0.70***	0.40	-2.90*
Climate	0.68***	0.27	-3.40**
Subordinate Development	0.65***	0.38	-3.22*
Composure	0.57***	0.29	-2.97*
Trade-Offs	0.58***	0.27	-4.59***
Listening	0.58***	0.24	-3.16*
Balance	0.44*	0.46	-2.15
Flexibility	0.69***	0.37	-3.73**
Sense of Purpose	0.39***	0.24	-1.80
Self-Confidence	0.25*	0.12	-1.88

*p<.01 **p<.001 ***p<.0001

These results indicate that the program is having a significant positive impact on the participants who attended. However, the results should be viewed with caution given the small sample size. We also want to note that the methodology of asking raters to directly assess change is less common than the traditional pre-post approach. However, according to Howard et. al. (1979), this method correlates more highly with objective measures of change (p. 146).

Content Analysis. The results of the content analysis of the action-planning interview data are presented in Table 5. There were 20 categories of actions reported including a miscellaneous category. These items tended to be too situation specific to content analyze. Table 5 depicts both the total number of actions reported by category (some participants had multiple actions reported in the same category) and number of participants with at least one reported action in the category.

Table 5.

Categories	Total # Actions Reported in the Category	# Participants
Miscellaneous	20	16
Communication/Listening	16	14
Interpersonal Relationships	14	10
Sense of Purpose/Vision	13	11
Balance/Family	12	10
Systems	11	08
Composure/Coping with Emotional Disequilibrium	09	09
Organizing the Job/Work	09	05
Openness	08	07
Subordinate Development	08	08
Utilizing LeaderLab® Content or Processes	07	06
Self-Awareness/Reflection	06	06
Self-Confidence	06	05
Roles	06	04
Health	05	04
Feedback	05	05
Career	05	04
Climate	04	03
Perspective Taking	04	03

Three key areas of impact emerge from the two outcome measures: interpersonal relationships (treatment of others), communications, and systems. The vision/sense of purpose category also seems to have been an area of great impact from the interview data. We were somewhat dissatisfied with this scale from the Change Questionnaire and believe it might have shown more impact if we had used better items. Perhaps it is not surprising that in using rater data only on the Change Questionnaire we found the greatest reported change on self-assessment and seeking feedback. The program encourages participants to share learnings about themselves and seek feedback from relevant coworkers throughout the six months.

Conclusions

Program designers may want to consider the findings from this study in crafting programs which integrate work and learning. What the process advisor relationships and the intervention stretched over six months may provide to the participant is *ongoing support and pressure*. LeaderLab® appears to have struck a balance between the two motivators. The way the program is able to *deeply personalize* the action planning and artistic activities may be the key to their impact.

Finding a way to connect to some deep personal meaning through the artwork and then carry that into the action planning may increase commitment and help integrate the participants' own vision with their leadership situation at work.

Given the amount of turbulence we found in this study, it would appear the relationship between turbulence and actions taken by participants warrants further study. Our research indicates that moderately stressful situations can motivate participants to take action to increase their effectiveness. Determining how turbulence facilitates program impact would be helpful to potential participants and their organizations in deciding whether the "timing is just right."

We also believe the findings related to different models of action planning can provide a rich research agenda for the future. If managers need models which are different from the traditional goal attainment model, then our three models may provide a starting point for further exploration. The process that LeaderLab® employs is dynamic and evolving, although it can only be taken so far within the six months of the program. Reframing our thinking around action planning also has implications for the questions we ask of our programs regarding their effectiveness. The questions asked would probably depend upon which model is operant. Perhaps we should challenge ourselves to look beyond the goal-attainment model and think about questions regarding the evolution of action steps and visions.

Finally, the outcome measures employed show distinct patterns of positive program impact. Since we have never used participant only (self-report) data, we believe the impact areas make sense: relationships, communication, systems, visioning. Frequently, the raters are the recipients of actions taken in these areas, so it seems natural that they would note changes. This raises a final point: we believe our findings to be more robust because we have not relied upon self-report data only. The downside to this choice is that we have omitted some rich data regarding the change process as the participants' experienced it. We hope to present the data both ways in future publications.

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The Development of Standards of Competence for Senior Management.

Gill Lane and Alan Robinson
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In a dynamically changing world in order to gain competitive advantage organizations need to focus on the development of their most significant resource, their staff. The challenge, therefore, is to develop highly skilled and competent performers who continually review and improve their performance against an acknowledged standard. Henley Management College, England, on behalf of the Management Charter Initiative (MCI), have developed such a set of standards against which senior management performance might be measured. This paper outlines the research, outcomes and issues involved.

Recent years have seen organizations face a business market which is changing faster than ever before. Competition is increasing constantly as costs rise and profit margins fall. The world of the 1990's poses extreme challenges for business firms across the entire globe. An extensive survey conducted world-wide with more than twelve thousand managers revealed that 80% of them expected their future business environment to be more dynamic, complex and difficult to predict than it was at present, Kanter (1991). It is argued that in order to gain full competitive advantage organizations globally need to focus on the training and development of their staff. Rapidly changing markets, international competition, new technology and demographic changes have led to increasing demands for new ways of learning that would assist organizations through times of change Thurley (1990). As a result of the turbulence that organizations are increasingly experiencing training and development has to change fundamentally in order to respond to the constantly changing demands of the socio-economic environment. Handy (1985) argues that faced with blurred aims, conflicting functions and no simple way of measuring success, organizations have a major managerial problem. Without clear measures of success there are no obvious ways to assess the progress of individuals or groups, every judgment becomes subjective and personal.

The continuing challenge of the '90's, therefore, is one of developing highly skilled and competent performers at all levels of employment, who continually review and improve their performance against an acknowledged standard. *'Life Long Learning' is* fast becoming a cliche, but as a concept it very much represents the way in which individuals and organizations need to develop. Employers need to keep their workforce skilled and at the forefront of technological change; this means more than just recruiting the right people. It means continuously developing them, training and retraining to maintain the level and currency of their skills, knowledge and competence. In a society in which change has become the norm, it is no longer possible for a set of skills acquired at the start of a working life to remain relevant and serviceable throughout an average life span. It has been apparent for some time that theoretical knowledge and understanding alone are no longer valuable measures in forecasting how well people will perform in actual work situations. Such a system, Jessup (1991) argues, needs to be bound into a framework of occupational competence identified as being essential in the fulfillment of a specific work role.

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This paper, therefore, reviews some of the issues and outcomes resulting from research undertaken by Henley Management College on behalf of the Management Charter Initiative into identifying the standards of best practice required of senior management, a project funded by the United Kingdom Employment Department, and operationally referred to as M3.

National Management Standards - A Historical Perspective. The dynamically changing economic conditions during the 1970's and 1980's, were without doubt instrumental in providing a new impetus and direction for vocational education within the United Kingdom. During this period a combination of factors including;

- the rapid sophistication of technology and work practices
- the need to provide opportunities for greater access to continuous learning
- complaints from employers of skill shortages and falling standards
- the outcomes derived from traditional knowledge-based courses

led to the development of a number of new aims and approaches for vocational education. These concerns were highlighted in the Manpower Services Commission (MSC) publication "The New Training Initiative: An Agenda for Action." (1981). This set out a strategy for improving the standards of vocational education in the U.K. with the aim of developing a more highly skilled and flexible work force. The document stated that, at the heart of the initiative lie standards of a new kind. The meaning of this simple phrase, however, was not elaborated upon and it was not until some time later that the concept of competence-based standards and associated qualifications began to emerge.

Shortly afterwards, through the publication of two further documents, the government clearly signposted the direction in which policy was about to move. Both of these linked the idea of a competence based approach towards training with the need for a new, coherent structure of vocational qualifications.

The first of these was another report by the MSC and the NEDC: "Review of Vocational Qualifications in England and Wales" MSC/NEDC (1986) This suggested that existing vocational qualifications lacked consistency and clarity and were not easily understood by employers. The report suggested that a new form of vocational qualification should be developed. This should consist of:

> ...a statement of competence, clearly relevant to work and intended to facilitate entry into and progression in employment, further education and training, issued by a recognized body to an individual.
>
> MSC/NEDC (1986 pp. 4)

The second of these documents was the government white paper, "Working Together, Education and Training" Cmnd. No.9823 HMSO (1986). This set out plans for a fundamental review of education and training within the U.K. and proposed that, "the structure of vocational qualifications be reformed". It further stated that, vocational qualifications needed to relate more directly and clearly to the competence required (and acquired) at work. This white paper led to the formation, later in that year, of the National Council for Vocational Qualifications (NCVQ) and the inauguration of a major program to develop occupational standards. In parallel with the formation of NCVQ, the Government launched a program for developing competence-based occupational standards in all vocational areas. In conjunction with these two programs, two other types of body were formed. These were " Lead Bodies " and " Awarding Bodies ". Lead Bodies are constituted of representatives of leading practitioners from within a specific functional sector and are given responsibility for developing occupational standards and related National Vocational Qualifications (NVQ's) in particular industrial sectors or for cross-sectoral roles. Awarding bodies, on the other hand, are pre-existing examining boards or other types of awarding institutions who are responsible for awarding a particular NVQ.

In this respect the lead body for management standards is the National Forum for Management Education and Development (NFMED), better known by the title of its operating arm, The Management Charter Initiative (MCI). MCI was formed in 1988 following mounting criticism of the lack of adequate training amongst U.K. managers. Two publications which were particularly influential in drawing attention to this problem were those produced by Constable and McCormick (1987) and Handy et al (1988). It was shortly after the publication of the latter that the Confederation of British Industry (CBI), the British Institute of Management (now the Institute of Management) and others inaugurated the MCI in an attempt to improve the quality of British management through appropriate forms of management development.

From its inception, the MCI was offered moral and financial support by the Government and was soon given a leading role in the development of national standards of competence for managers. To date national standards have been developed for three levels of management: supervisory, (MIS) junior, (M1) and middle managers (M2) (Cheetham (1922).

National Standards and The Concept of Competence. Focusing upon developing competence related to workplace practice and standards of performance requires a re-think not only of current education and training but also the way in which learning is assessed. The White Paper entitled "Working Together - Education and Training" provides a clear statement of what should be assessed in which it states;

> a statement of competence should incorporate the assessment of skills to specified standards, relevant knowledge and understanding and the ability to use skills and apply knowledge and understanding in the performance of relevant tasks.
>
> cited in Cheetham (1992 pp. 2)

What is this competence ? What does it look like as a whole, particularly with regard to the workplace? If, the aim of an effective learning program is the development of competence, it is of considerable importance how one then views competence. However, in asking the question, what is competence? it is recognized that there are as many definitions as there are individuals prepared to make a contribution in this direction. As Winter (1991) points out, in relation to the development of standards, the Training Agency's wide definition of competence serves as a reasonably broad starting point, in it they state;

> Competence is a wide concept which embodies the ability to transfer skills and knowledge to new situations within an occupational area. It encompasses organization and planning work, innovation and coping with non-routine activities. It includes those qualities of personal effectiveness that are required in the workplace to deal with co-workers, managers and customers.
>
> T.A. Guidance Notes p.1.

In a further attempt to clarify occupational competence The National Council for Vocational Qualifications NCVQ (1989) provide us with a definition in which they state:

> Competence is the ability to perform a range of work related activities and skills, displaying the knowledge and understanding which underpins such a performance to the standards expected in employment.
>
> cited in Cheetham (1992 pp. 6).

The key point in all of this, however, is that competences are dimensions of behavior which are related to levels or standards of performance and can be defined in outcome terms.

Setting up The Research.

An Overview. In September 1992, MCI in responding to a number of pressures to develop Senior Management standards commissioned a short investigatory study to explore the level of demand for a further model of management beyond those of M2, MI and MIS. Reay & Crawley (1992). The principal finding from the study revealed significant support for the MCI to develop a further model which reflected standards of best practice for senior management and complemented those already in use. As a result MCI commissioned the development of three interdependent models based upon

- acknowledged standards
- knowledge and understanding
- personal competence

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The research upon which this paper is based, refers to the development of senior management standards and was undertaken jointly by Henley Management College and Northern Regional Management Center on behalf of MCI and funded principally by the United Kingdom Employment Department.

The project involved the development of a set of generic competence based standards which reflected the role expectations of senior managers and which built upon previous work on the development of management standards at middle(M2), first-line (M1) and supervisory level (M1S).

In order to oversee the management of the project, representatives of the business community were invited to act as members of a steering group with the specific intention of providing on-going support and monitoring the project's progress.

The data obtained reflects the views and experiences of two hundred senior managers, representative of all organizational sectors within the UK economy. The information gathered was supplemented by the views of business school academics and others involved in management development.

Preliminary work involved the development of an operational definition of senior management and agreement with the steering group regarding the criteria for selection of a representative sample of key sectors of the UK economy. As a consequence, the workshop program and interview schedules undertaken at a later date were devised to facilitate geographic as well as sectoral representation. Small organizations, however, were seen as being potentially different from their larger counterparts and were likely to form a subset of the main program. As a result MCI set up a separate project to focus specifically on this issue.

The operational definition of a senior manager and the selection criteria for the sample were initially discussed and agreed by the steering group as a result it was determined, that for the purpose of the project, that a senior manager would be someone who had;

- significant responsibility for proposing and implementing policy and overall strategy;
- responsibility for significant resources;
- responsibility for initiating and leading strategic change;

It was considered that he/she may be the chief executive or a member of the executive team, or at the level reporting to that group in a large organization or operating subsidiaries and/or their equivalent in public and other sectors. It was equally important when establishing the selection criteria of a representative sample to ensure that only senior managers who were exemplars of best practice were included, as a result selection focused upon individual managers who:

- were promotable
- were consistent in achievement of targets
- were the people who the organization could least afford to spare
- were *critical* to the success of the organization
- had successfully dealt with turnaround, downsizing or taken the company into new markets
- had demonstrated achievements in excess of expectations.

In order to encompass as wide a cross-section of organizational types as possible, therefore, the sample was drawn from:

- public/private sector organizations
- UK/foreign owned
- different ownership arrangements
- small and medium sized organizations
- range of functional backgrounds
- geographical spread.

The specific objective of the research and the primary focus of this paper, therefore, was:

1. to identify competence based standards for senior management, representatives of major sectors of the UK economy covering public and private sectors, manufacturing and services, and

large and small employing organizations;
2. to identify the background knowledge and understanding- the information, theories and techniques which are required for excellent performance in senior management;
3. to provide a framework for the extension of middle management standards easing individual progression and career development.

Methodology

An overview. The MCI Management Standards Model comprises a set of observed outcomes of managerial activity which are measurable and explicit. In order for precise assessment of competence to take place, the standards are broken down into greater behavioral detail, first into units of competence and secondly into elements of competence. Each element outlines the knowledge and understanding, the performance criteria which provides a means of measurement, and the range of contexts in which these may be observed. Knowledge and understanding, on the other hand, encompasses the information, theories and techniques required for competence to be demonstrated. Whilst accepting that K & U are an integral part of the model, they are different in nature from the behavioral aspects and as such are viewed as a complementary aspect of the main framework. Equally important are the personal competence's or personal characteristics required by senior managers and whilst these are also regarded as important they too are viewed as complementary aspects of the model.

The initial development of management standards through M2, M1 and M1S was carried out by analyzing the roles of thousands of practicing managers from hundreds of organizations, resulting in credible and measurable standards required for the achievement of organizational objectives. The process of analysis was rigorous focusing on the functional activities and outputs of managerial work and subjecting them to discussion in a series of focus groups and workshop events. The requisite personal competence's and necessary underlying knowledge and understanding were identified and derived through a similar process initially using Behavioral Event Interviews (BEF) and questionnaires. The results being initially published as draft standards and tested in field trials with organizations prior to a formal launch.

In order to ensure continuity and to provide progression from one level of management to the next it was important that similar methods to those used in previous work were applied in determining senior management standards, and that recent developments in methods and applications were incorporated in the project approach.

The Adopted Methodology.

The principal data was obtained through an initial literature review, a series of nine workshop events throughout the UK, in-depth interviews and finally by questionnaires regarding the resultant model.

Literature Review. The aim of management research as Easterly-Smith et al (1991 pp. 1) point out, "is to provide a bridge between theory and practice." An essential aspect of any respectable management research process is the part played by a thorough review of previous investigations into the area under examination. The purpose of the literature review, therefore, was to examine the experiences and reflections of practitioners and academics, who from their own experiences and previous studies have attempted to make the bridge more meaningful and transparent.

The review provided an overview of the varying concepts of management and then proceeded to highlight some of the factors and functions which differentiate the role of senior management from other levels and roles within an organization.

Workshops. The principal method for obtaining data was through a series of workshop events which typically took place over an entire day. Approximately fifteen to twenty senior managers from different sectors of industry attended each of the workshops and after a general briefing worked individually within small focus groups and contributed to plenary sessions looking at aspects of their work activities. Each workshop was facilitated by members of the project team. In analyzing senior management activity the project focused upon two main areas of interest:

1. *the functions* which senior managers undertake and their contribution to the direction and operation of the organizations in which they are employed.
2. the *knowledge and understanding* which senior managers require in order to carry out these functions.

Critical Incident scripts. The critical incident technique as described by Flanagan in 1954 is a set of procedures for collecting direct observations of human behavior in such a way as to facilitate their potential usefulness in solving practical problems and developing broad psychological principles.

Critical incident technique is most commonly applied through interviews or similar types of interaction between the analyst(s) and the job holder or someone in a position to report on the job holder's behavior.

Using a combination of questions senior managers were invited to supply details of such critical incidents in relation to their senior managerial role. These formed the basis for later analysis providing information of

- functions
- success-v-failure
- underlying knowledge and understanding
- aspects of performance criteria both explicit and implicit
- key terminology
- links between circumstances and context

Its key features are that it elicits information on incidents which are observable or reportable in such a way that inferences can be made about a person and his/her actions. Written scripts from previous research have shown that sufficient data can be collected by this medium to give an approximation of interview or discussion providing sufficient detail for the purposes of analysis. These purposes included;

- grounding the identification of functions in actions undertaken by senior managers, rather than simply by their generalization about what constitutes senior management.
- generating indicators of the ways in which senior managers themselves characterized success and failure in different types of action - thereby suggesting the kinds of criteria which would apply to the functions derived from these actions.
- eliciting indications of the types of knowledge on which senior managers draw in carrying out actions.

Functional Analysis Framework. Prior to the development of the functional framework it was essential to determine the Key purpose of Senior Management. As a result data derived from individual comment, paired statements and focus group discussion led to the identification of a number of key words which acted as the starting point for a more in-depth analysis.

Data from the workshops further informed an emerging model with managers influencing its detailed development from one workshop to the next. This having been done the participant senior managers were invited to determine and describe the supporting senior management activity.

Initial functions identified were simply those in which competent senior managers should be able to engage. As the analysis proceeded, however, it was necessary to identify the distinguishing features of outcomes which were considered to represent successful performance and for which such qualities as creative leadership might be effective. This in turn led to the identification of performance criteria.

Development of Performance Criteria. The research team were interested in identifying the expectations of how senior management functions, emerging from the developing model, were conducted. The identification of such expectations to formulate performance criteria was addressed through the identification of measurable outcomes against each detail of the emerging functional model. Delegates at a number of the workshops were, therefore, asked to identify the various measures by which they might be judged. They were asked to focus on outward-looking measures as far as possible in order to try and establish links between the performance of senior managers and the effectiveness of the organizations. The headings under which people allocated different measures varied and participants frequently referred to what ought to be measured and how this might be done rather than what the measure itself ought to be.

Knowledge and Understanding. Three workshops concentrated specifically on aspects of knowledge and understanding to the extent that questions were tailored in order to elicit the underlying knowledge and understanding required by senior managers to undertake their various functions. From data obtained it was possible to identify knowledge of various orders. This includes knowledge of facts and of procedures, personal and local knowledge, and what might be best described as *tacit* knowledge - knowing how to deal with people and events in an informal, yet non-presciptive manner.

Follow-Up Questionnaires. Following the set of workshop events questionnaires were sent to a wider audience of senior managers, representatives of business schools and management developers who had not previously participated and to all those who had already attended the workshops.

Integration. Frequent contact and sharing of news and views on respective progress was maintained between MCI, the Henley team and NRMC as the different parts of the overall project proceeded in parallel.

An important aspect of the methodology was the integration of the two key sections of the project, namely:

- *standards of best practice and knowledge and understanding*
  (Henley Management College)
- *personal competence*
  (Northern Regional Management Center).

Additionally, each party shared their basic data allowing for maximum integration as well as providing extra data to the other party. Similarly, ideas regarding use of literature, approach to workshops and interviews, and on presentation of an integrated model were continually explored.

Outcomes

The Integrated Model. Senior managers, if they are to be effective, must bring to their jobs the knowledge which enables them to make the right choices in the way in which they plan and implement the organization's operations. Possession of this knowledge is not itself a demonstration of competence, but without it, it seems most unlikely that a senior manager could sustain competent performance over time or in a variety of situations.

Similarly, the behaviors which a senior manager may demonstrate do not constitute the whole of a competence, but there are strong associations between behaviors and effectiveness or success. There is, to some extent, a connection between personal competence's in which the identified key behaviors are grouped and particular standards with their associated knowledge and understanding. While there is no one formula for personal competences which will guarantee that any function will be performed effectively, bringing the personal competences to the situation makes meeting the outcomes more likely.

The model of senior management competence, therefore, has three components:

- *a set of standards*, expressed in terms of outcomes expected of senior management,
- the *knowledge and understanding* seen as underpinning such performance,
- the *personal competences* - those underlying abilities which give rise to key behaviors demonstrated by effective senior managers.

These three components complement each other. The standards provide a focus for senior management activity, specifying what is done and, where good practice is followed, what constitutes a satisfactory outcome.

One of the key questions in this project was "If success or failure of an organization can be attributed to senior management, just what is it that senior managers *do* in the contexts in which they find themselves which makes such a difference?"

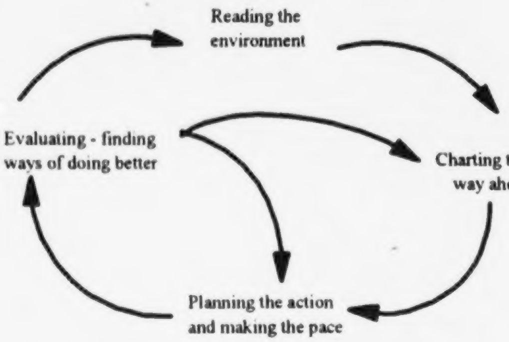
The focus, therefore, is not whether senior managers are performing routine, delegated actions in the right way; but whether they are doing the right things as well. It was agreed that the concept of seniority was associated with strategy for the organization and with operating in a way which was not confined to departmental or sectional interests.

Senior management includes those people who share collective responsibility within boards of directors. Its role includes advising boards and equivalent responsible bodies on what they should do and how they should do it. Senior management is also responsible for putting decisions into action and for creating the conditions in which first line and middle managers can conduct operations.

This span from the strategic to the operational is summed up as a *Key Purpose Statement* which states that the key purpose of senior management is to;

> *Develop and implement strategies and provide leadership to further the organization's mission and achieve the objectives.*

As a result of this four main areas of action emerged which can be best represented diagramatically as;


Reading the environment
Charting the way ahead
Planning the action and making the pace
Evaluating - finding ways of doing better

These dimensions can be expressed more formally as:

Reading the environment(ie)

Identify and evaluate opportunities and threats/obstacles for the organisation in the internal and external environments,

Charting the way ahead(ie)

Contribute to developing and communicating the mission, objectives, goals, values and policies of the organisation and its units;

Planning the action and making the pace (i.e.)

Develop and implement programmes, projects and operating plans for the organisation

Evaluating - finding ways of doing better (i.e.)

Review and evaluate objectives and policies and their implementation.

Projected Uses of The Integrated Model.

The senior management standards framework together with the personal competence's and underpinning knowledge and understanding can be used in a variety of ways to facilitate the achievement of organizational objectives. Besides receiving recommendations from participants involved with the project the project team also contributed ideas of their own.

The outcome of this was a comprehensive list of potential uses for the standards from which there emerged four key areas.

1. ***Assessment.*** The standards produced in the model were seen to provide a range of assessment criteria upon which individual managers, their employers and external assessing bodies could assess performance against a transparent and acknowledged benchmark. The types of use could include such aspects as;

- Bench marking of expectations
- Assessment of development needs
- Appraisal of performance
- Evaluation of outcomes
- Review and feedback

2. ***Career Development.*** As the standards model developed many contributing senior mangers were able to see its use in terms of an aid towards career development. This could take place on a number of levels, for example;

- the current position
- the next potential position
- a lateral move either inside or outside the organization

In addition to helping individuals to "fill the gap" of career knowledge and work towards gaining enhanced ability in identifying specific areas of need for career growth the standards could be utilized by career guidance counselors. The underlying usage of the standards in career terms can be said to be one of ' individual enhancement'.

3. ***Personal Focus.*** Individual senior managers could be encouraged to identify their own developmental targets and to 'self-develop' to achieve such a focus. In appraisal terms at senior management level one often refers to achieving 'Key Result Areas'. The setting of such areas as targets can be linked with the standards providing a 'benchmark' or 'checklist'. In order to assist such personal growth individuals might be encouraged to utilize the standards to assist them in the preparation of their own on-going development programs.

4. ***Organizational Response.*** Employing organizations may well value the standards from the perspectives already provided in 1 and 3 above. Additionally they might consider the standards to become a working tool for the organization to the extent of using them to;

- design assessment criteria
- introduce personal development programs
- focus upon team or group development using the standards as the overall template
- develop the organization through strategic focus of attention on specific parts of the model at specific times in order to respond to market trends
- as an aid to recruitment and promotion.

Conclusions

This paper has attempted to provide an overview of some of the issues surrounding the identification of management competence's. In particular it has focused upon those aspects of managerial behavior that distinguish the superior performer from the average.

Senior management as a whole requires the performance of all functions represented by these units, but individual senior managers may recognize that they are not expected to perform all of these functions at any one time or in any one situation. Change the situation, however, and any of the functions might become part of their role.

The senior management standards are designed to apply to a wide range of organizations, covering the private, public and voluntary sectors. During the development of the standards we were impressed by the degree to which senior managers from different sectors and many different types of company found themselves having to deal with essentially the same functions. The cases they cited were different in many ways. The scale of events, the financial implications, the degrees of urgency and criticality and the context created different demands, but the focus of action was capable of being expressed in a much more common way. We have attempted to summarize these in the functions the elements - for which the standards are defined.

The functions do not represent discrete *tasks* for senior managers to undertake. Our sample of managers would defend their right to operate in their own, often innovative ways. Instead the functions represent the components of what it is that senior management is responsible for achieving, however it is done. The functions are separated only as far as is necessary to specify the outcomes of senior management's contribution to he organization. There is always a tension in separating functions. Not to do so means that only gross, general end results can be specified, not necessarily attributable to management, let alone individual managers. This breakdown attempts to go just far enough to specify, without excessively determining how senior managers achieve what they are meant to.

This paper has attempted to highlight some of the fundamental concepts associated with establishing standards of managerial competence. The authors recognize that the way in which MCI standards of competence are defined (i.e. in terms of outcomes) does not have universal acceptance. Equally they make no claim that all the issues have been addressed. It is hoped however, that the paper will stimulate further debate in order that a clearer understanding of the many issues might be realized.

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Leadership Development of Physician Executives

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The authors conducted a national study to determine the factors associated with success of physician executives. They utilized three instruments to study 150 physician executives: the Leadership Practices Inventory (LPI), a demographic survey, and individual interviews with 20 respondents. The authors focused on the implications for the selection, training, and management/career development of physician leaders.

With critical reforms emerging in the 90s, health care organizations are changing at lightening speed. Hospitals, private practices, HMOs, and insurers are aligning to increase their odds of survival in an era of restrained resources and competition. Physicians are propelled to shift from solo, autonomous, and self-regulated practices to collective, collaborative and externally managed ones. Who are leading these changes? Historically, health care leaders have come predominantly from non-clinical backgrounds. But, looking around today, we see yet another change: the increasingly strong presence of physicians who have emerged as leaders in the forefront of health care reform.

Problem Statement and Theoretical Framework

Who are these physician leaders and how do they approach their leadership roles? What would they say are critical success factors for physician leaders in these turbulent times? If queried, would physician leaders report similar practices as leaders in other industries? Studies (Bennis, 1989; Kotter, 1988, 1990; Kouzes and Posner, 1987, 1989; Zaleznik, 1992) have identified practices of successful leadership. None of these studies specifically focuses on the physician leader. And, if factors associated with physician success could be identified, what would they implicate about the training and development of physician leaders?

While there is a proliferation of executive training activities for physician leaders, some of this training appears to utilize traditional paradigms intended for non-medical administrators—paradigms which may or may not be optimal for physician leaders. One extensive physician leader study reported that as their training and experience in management increased, the more competent they believed themselves to be in management (Tabenkin, Zyzanski, & Alemagno, 1989). Ten percent of the physicians in this study reported they had not had management training, 57 percent reported moderate levels of training (including seminars, informal training, and graduate coursework in management), and 24 percent indicated they had received a high level of training (including a graduate degree in management or coursework leading towards a degree, plus seminars and informal training). While this study was extensive, it did not address the appropriateness of the content of the training and how it might be developed to reflect the unique needs of the physician leader.

Research Question

What are the factors associated with physician leader success? To understand the dimensions of this question and the implications for physician executive training and development, the authors undertook a national study.

Methodology

The authors randomly selected 150 of 350 Fellows of the American College of Physician Executives (ACPE). The authors worked under the assumption that achievement of the Fellow title implied at least

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some level of success as a physician leader. To profile these physician leaders, the researchers used three methods of data collection: the Leadership Practices Inventory (LPI) (Kouzes & Posner, 1988), a demographic survey designed by the researchers, and individual one hour interviews of 20 physician leaders who participated in the study and volunteered to be interviewed.

Leadership Practices Inventory The LPI, designed and developed by Kouzes and Posner (1988), is a survey using a five-point Likert scale. Kouzes and Posner (1988) used factor analyses of sets of behaviorally-based statements of leadership practices in the LPI. The analyses demonstrated patterns of critical leadership actions in five categories:

Challenging the Process: "Searching out challenging opportunities to change, grow, innovate, and improve; and experimenting, taking risks, and learning from the accompanying mistakes (p.5)."

Inspiring a Shared Vision: "Envisioning an uplifting and ennobling future, and enlisting others in a common vision by appealing to their values, interests, hopes, an dreams (p.6)."

Enabling Others to Act: "Fostering collaboration by promoting cooperative goals and building trust; and strengthening people by sharing information and power and increasing their discretion and visibility (p.6)."

Modeling the Way: "Setting the example for others by behaving in ways that are consistent with their stated values; and planning small wins that promote consistent progress and build commitment (p.7)."

Encouraging the Heart: "Recognizing individual contributions to the success of every project; and celebrating team accomplishments regularly (p.7)."

Demographic Survey The authors designed a demographic survey to accompany the LPI, including questions regarding career path and leadership practices. The demographic survey and the LPI, along with a cover letter, were reviewed by experts and piloted with 25 physician leaders participating in a 13-week seminar, "Certificate Program in Management for Physicians," offered through the Center for Health and Medical Affairs, University of St. Thomas, Minneapolis, sponsor of the study.

Interviews To obtain a sample of respondents for interviews with the authors, the demographic survey included a solicitation for volunteers who would be willing to be interviewed at the ACPE Conference in Washington, DC in May, 1994, or by phone. The authors scheduled one hour interviews with 20 volunteers. The interview questions focused on selection processes for their current position, perception of variables associated with leadership success and failure, core philosophy regarding leadership, the handling of leadership obstacles, and the management and career development for potential physician leaders.

Statistical Procedures The authors used an F-test and the Pearson Product-Moment Correlation to assess statistical differences between LPI indices and the variables in the demographic survey. In addition, the researchers analyzed the major themes found in the interview data.

Results

The results of this study are currently not available; preliminary results will be disseminated at the Conference.

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ON A CLEAR DAY YOU CAN HAVE A VISION: A VISIONING MODEL FOR EVERYONE

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In reality, we can't see very far without having a clear, mutually agreed upon vision. It is becoming apparent that even our most successful organizations are amazed at their own lack of agreement concerning their corporate vision. In part, they seem to have their vision (a desired end) confused with their goals and objectives (the means to get there). This paper presents a participative model for visioning that is intended to encompass all organizational stakeholders.

The familiar song lyric says, "On a clear day you can see forever." It's a nice thought but, in reality, no matter how clear the day, we can't see very far without having a clear, accurate, well-reasoned vision. Although we tend to forget it, we have always known that this is a basic truth. Even the old testament of the Bible tells us that without a vision the people will perish (Proverbs 29:18 and Hosea 4:14). According to Lee (1993), "The concept of vision has never been more important than in today's world of flattened, delayered, decentralized organizations" (p. 26). This need for a clear vision as a starting point and anchor for what we do is equally important for our organizations, the individuals in those organizations and all of the levels in between.

First, let's understand what we mean by the word "vision" in this context. According to Info-Line (1991), visioning evolved from two planning concepts from the 1950s and 1960s; management by objectives and strategic planning. These concepts were rather dry and lacked enthusiasm and employee buy-in because they relied heavily on facts and figures handed down from above. Visioning is designed to correct these flaws by participatively involving the mind and spirit of each organizational member. Webster defines visioning as the ability to perceive something not actually visible, as through mental acuteness or keen foresight. According to Lee (1993), when you create a vision, "you're writing a constitution, a frame of reference for everyone" (p. 28). A vision is a commitment to establishing rethinking, and reviewing who we are and what we are here to do. For example, according to Naisbitt (1984), the railroads in America have fallen on hard times in recent years, at least in part, because they never faced up to the business in which they were really engaged. They operated during their good years as if they were in the train business rather than realizing that they were in the goods and people moving business. In other words, we may be dealing with a confusion between means and ends. If the end is to move people and goods, one available means is the rail system. If, on the other hand, the end is to build and run a railroad, the means becomes the movement of goods and people. Which of these two visions ultimately become the basis for planning and operating naturally make a big difference in how they run their day to day business.

Perhaps the same visioning problems could be applied to the struggling U.S. automobile industry. The American auto industry may need to ask itself whether they are in the business of building motor vehicles or the business of moving people and goods. For instance, if the desired end (vision) is to move people and goods, the day may come soon when they should build monorails or whatever mode of transportation is viable and feasible at the time (the means).

A good way to define a vision more formally is to examine what a vision can do for us. A vision can provide a road map for future direction and generate excitement about that future direction. A vision can also create order out of chaos and, last but not least, it can offer a criteria for measuring success. We have stated what a vision *can* do but to really be effective a vision *must*:

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Be coherent enough to create a recognizable picture of the future
Be powerful enough to generate commitment to performance
Emphasize what realistically *can be*
Clarify what *should be.*

In sum, according to Warren Bennis (1992), a vision is part rational (the product of analysis) and part emotional (the product of imagination, hunches and values); it embraces the yin and the yang of corporate strategy and performance. Now that we have an idea of what a vision is, let us further examine the need for visioning at all levels and then propose a model for arriving at that vision.

The Need for a Clear Vision

It is fair to ask why it is so important to establish a clear vision. Research and practical experience answers that by telling us that visions:

1. inspire and motivate
2. provide direction and foster success
3. are essential to the organization of the future
4. enable us to benchmark our progress and evaluate our outcomes

The need for a clear vision is important at all levels from entire organizations to each individual in those organizations. It should also be obvious that it is equally important to have an agreement between our personal vision for our own future and the vision of our organization. However, this agreement is hard to achieve if those visions are not clearly articulated.

Our personal, individual visions are all unique. Those visions or dreams usually start very early in life. In a way our wishes, dreams and visions make us all orphans. Nobody is exactly like us including our own family.

At the corporate level it is important to have a vision in order to have direction, to efficiently plan for the future, and be able to work together to accomplish our goals. However, it has become very clear, and at the same time surprising, that many of our most successful corporations do not have a clear corporate vision. Consultants tell us that, when they bring the key people in a corporation together, there is often great surprise among these key people themselves at how little agreement they have concerning the corporate visions. "If you have no clear direction, it's tough to know -- or care -- if you're heading where you want to go" (Lee, 1993, p. 26). In other words, if the organization has no clear, agreed upon vision, it is difficult for them to know if they are heading in the right direction at any given time. One of the eight basics of Peter's and Waterman's (1982) excellent companies is to "stick to the knitting." This is good advice but rather difficult to accomplish if it is unclear exactly what "the knitting" is.

By our own observations and/or from the information already presented here we can hardly deny that we must have a vision for ourselves and have a clearly agreed upon vision in our organizations. The need for a vision, however, reaches much further than this. For example, with a vision, organizations *and* individuals would both make much wiser, well advised human resources choices. That is, with a clear, agreed upon corporate vision there is a much greater probability of selecting new employees whose personal vision is in line with the corporate vision. On the other hand, if an individual has a clear personal vision of their own career path, they are far more likely to choose a work environment that will provide a compatible vision. In both cases many costly human resources mistakes currently being made could be avoided.

Being Certain We Can and Will "Walk the Talk"

Once we establish and articulate our vision, particularly a corporate vision, we must own it, believe in it, exemplify it in our behaviors and choices, and generally live it every day; we must walk the talk. Many organizations post their vision on the wall in a nice frame or print their visions and goals on plastic cards to be carried in a pocket. If, however, the visioning process is just a fad and/or is not embraced by everyone so that it becomes the basis for all organizational activity, all we have is a wall decoration or a pocket filler.

Even if a vision is "owned" by everyone in the organization, it will take determination to stay the course because the world around us will constantly try to dissuade us from our vision. Our vision, especially if it represents a major change in how we view ourselves, will always need to be protected form the natural desire to retreat to our "comfort zone."

If we establish and articulate a vision that turns out to be just window dressing or a motto on the wall that bears no resemblance to day-to-day reality, many negative outcomes can occur. In such a case, the vision will not provide any real direction for the organization nor will it provide a realistic benchmark by which we can evaluate ourselves. Perhaps most important, that gap between a stated vision and daily reality will be anything but inspiring and motivating. In fact, many organizations, which probably should remain nameless here, have experienced a severe backlash from such a dichotomy. The cynicism that organizations stir up when they fail to live by their visions eventually can develop and jell into a pervasive distrust (Lee, 1993). So, if we don't *really* believe our vision and live it every day, we might be better served to forget the vision altogether. In other words, no stated vision at all may actually be better than a lip service vision that creates frustration by bearing no resemblance to reality.

The Process of Creating and Establishing a Vision

In the introduction it was suggested that finding out what our vision really is may be a matter of sorting out means from ends. Examples of success brought about by clear visions and having no confusion over means and ends are many and diverse. For example, there is a chicken fast food concern who discovered that their vision (end) is to provide a meaningful work experience for young Americans and they accomplish that end by making chicken sandwiches (means). If the means and end were reversed they would be running a far different operation. Another case is a playground architectural firm that is so invested in the vision of a voluntary, community-built concept that they will not build the playgrounds in July or August. Indeed those are the best outdoor building months but they are also the months when schools are closed and community members are away on vacation. Now that is knowing your vision and following it regardless of intervening factors.

A "good" vision statement should lay out our financial and spiritual aspirations (the ends) in about 25 words or less (Schaaf, 1993). The process of establishing a vision eventually involves the asking of straightforward questions and obtaining honest answers. As pointed out earlier, Naisbitt (1984) says that at some point we must ask ourselves in what business we are *really* engaged.

Here are some other questions that might help us know who we are and/or who we want to be:

- What is our purpose?
- What is your driving force?
- What are our core values?
- What do we do best?
- What do we want to accomplish?
- What do we want to change?

Once we have answered these questions concerning who and/or where we are *now* as well as who and/or where we *want* to be (our vision), we must consider the potential barriers to reaching that vision. After all of these considerations have been examined, we can develop a set of goals, measurable objectives and strategic plans to accomplish our vision. Jack Asgar (1993) points out the fact that:

> If managers want to change an organizational culture, they first must have a solid grasp of the present situation, how it was formulated, and how it is operating. They then need a clear idea of where they want to go, how they're going to get there, and the probable consequences of the attempt (p. 94).

Who and or where we want to be, then, is our vision or *desired end*. The goals, plans, and measurable objectives are the *means* to get there; a clearly defined road map.

Organizations contemplating the creation and establishment of an effective vision need to apply the foregoing questions and plans within some preestablished guidelines. Some suggested guidelines are:

- A *vision* should be relatively timeless. Changes might be necessary due to major changes in the environment but the vision should be established as if it wouldn't ever change.
- Goals and objectives (the means), on the other hand, must remain flexible enough to accomplish the vision.
- Both the vision (the end) and the related goals and objectives (the means) should be based on a set of principles or parameters.
- The vision should encompass all of the organization's members. The ultimate effectiveness of the vision depends on the total participation of the organizational members in its establishment; they must own the vision if it is ever to be implemented.

Now that we have explored the fundamentals of how to create and establish a vision, we need to look more closely at a model or suggested action plan depicting how the process fits together and examine the instruments necessary to bring the model to fruition.

The Model

This visioning model, or action plan, is divided into stages (see Figure 1). The first two stages ask for an individual, independent perception of the current organizational vision from all organizational members. The third stage requires the management team to come to consensus on *the* organizational vision and set goals and measurable objectives. The final stage asks each manager to set down with their associates (team members) and together set vision-based individual goals and measurable objectives.

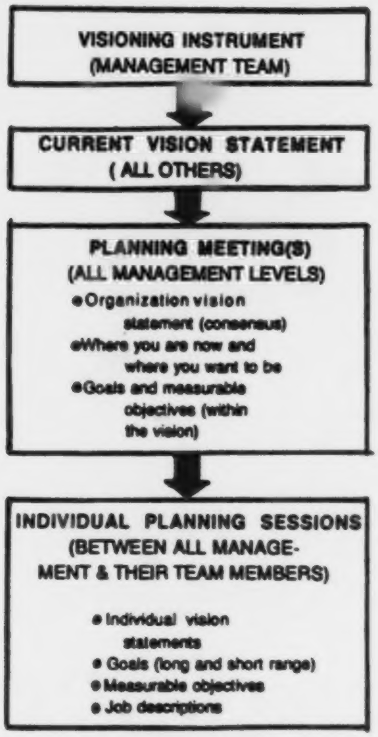
VISIONING INSTRUMENT
(MANAGEMENT TEAM)
CURRENT VISION STATEMENT
(ALL OTHERS)
PLANNING MEETING(S)
(ALL MANAGEMENT LEVELS)
●Organization vision statement (consensus)
●Where you are now and where you want to be
●Goals and measurable objectives (within the vision)
INDIVIDUAL PLANNING SESSIONS
(BETWEEN ALL MANAGEMENT & THEIR TEAM MEMBERS)
● Individual vision statements
● Goals (long and short range)
● Measurable objectives
● Job descriptions

Figure 1. Model for a Visioning Action Plan

In the first stage, the management team is asked to respond to a visioning instrument. The organizational levels to be included in this stage are optional. The suggested instrument is a revised version of Warren Bennis' Intent Quotient (IQ) questionnaire (see Appendix A). It is very important that everyone filling out this form do so independently and at the same time without consulting with one another and without prior notice to "reduce the potential for being influenced by the answers of others" (Morrisey, 1992, p. 73). In other words the results will be more effective if the responses are spontaneous and individualized.

Closely following this first stage, all organizational members will be asked to respond individually and independently to a scaled down version of the IQ instrument (see Appendix B). Once these visioning forms have been completed, the management team will meet to compare their perception of the corporate vision with those of their managerial colleagues as well as the organizational vision statements of their associates.

During these management planning meetings there is normally a surprising amount of shock and disbelief revealed concerning the amount of discrepancy and difference of opinion between the participants regarding the organizational vision. During this management meeting stage it is helpful to address such questions as who, where, and what the organization is now and who, what and where it wants to be. The goal of this meeting should be to reach total consensus right there on the spot on an agreed upon organizational vision that can be written down and articulated. Once consensus has been reached concerning the organizational vision, the group must articulate a set of general goals, an action plan to bring the vision to fruition as well as the specific measurable objectives necessary to carry out the goals. We must remember that a vision (end) is not the same as an action plan (means). A vision without an actin plan is just a dream; an action plan without a vision is drudgery; a vision *and* an action plan is our best hope for the future.

This action plan consisting of goal and objective setting activities may be done at the visioning meeting or at a subsequent meeting or meetings to be called as soon as possible. The goals and objectives should always be kept within the parameters of the agreed upon vision. The goal and objective setting task can be handled by the management team or in consultation with other or all organizational associates depending on the commitment to participation currently existing in the organization.

After the vision, goals, and objectives have been set, the organization can move into the final stage of the model. In this final stage each manager and supervisor at each level will take the opportunity to sit down with each of their team members to participatively and jointly agree on an individual vision for each of these team members. Of course, the individual vision needs to be within the parameters of the agreed upon organizational vision as well as specific to the individual's position and functional responsibilities within the organization.

This process of sitting down together and understanding each other is vital to the ultimate achievement of organizational and individual visions. This understanding, or the lack of it, is portrayed in Figure 2.

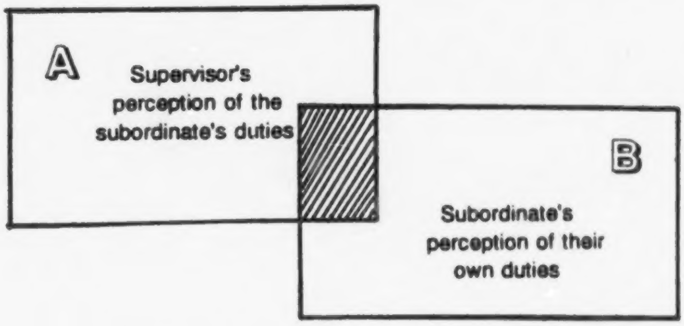
A
Supervisor's perception of the subordinate's duties
B
Subordinate's perception of their own duties

Figure 2. Perceptions of job descriptions

Area A represents the amount of dissatisfaction the supervisor feels because of perceived portions of the subordinate's job which are not being accomplished. Area B represents portions of the job which the subordinate perceives as being vital to his/her daily activities and responsibilities but for which he/she never seems to get credit for accomplishing. The dark area represents the only time when both parties are satisfied. The goal of the process is to decrease areas A and B and increase the dark area. In order to accomplish this goal the meeting should include the setting of agreed upon long and short range goals for the team member, measurable objectives as well as how and when their outcomes will be evaluated and, occasionally, revisions of the job description when necessary.

The total expected outcome from the application of this model is an organization that knows who it is, what it wants to be and how to get there. An even greater expectation is an organization that, if it went back to the first two steps in the model, would independently write down an identical organizational vision; everyone in the organization would be running in the same direction.

Conclusions

By now it should be obvious that an organization without an agreed upon, clearly articulated vision is like a ship without a rudder; an airplane without a flight plan. We need only look around at recently successful organizations which are now in serious trouble to realize that, without a clear vision and a plan to articulate that vision, any organization and/or individual will surely perish.

We need to eliminate any and all confusion concerning what we are and who we want to be. Warren Bennis (1992) tells us that a clear vision should answer the following questions:

- What is unique about us?
- What values are true priorities for the next year?
- What would make me personally commit my mind and heart to this vision over the next five to ten years?
- What does the world really need that our organization can and should provide?
- What do I really want our organization to accomplish so that I will be committed, aligned, and proud of my association with the institution?

This paper has presented a model for a visioning action plan that is intended to encompass all organizational stakeholders. The model fosters participative agreement concerning who we are now and a vision for who we want to be (desired end result) as well as the means by which we intend to reach that end result. No matter how well the model and the visioning process itself works, it means nothing unless every organizational member is unified concerning the vision and puts the vision into practice on a daily basis.

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APPENDIX A

NOTE: This is a revision of Warren Bennis' Strategic Intent Quotient questionnaire

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Please answer the following questions as honestly as you possibly can. Answer them independently and do not discuss these questions and/or your answers with others in your organization at this point. We are only interested in your own personal opinions.

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1. Is the organization moving in a clear direction?
   Yes   Not Sure   No

2. Is that direction clear to the people in your organization?
   All of them   Some of them   A few of them   None of them

3. Does your organization have a well-articulated, clear mission statement of its strategic vision?
   Yes   No

4. Could you write a one- or two-sentence statement of that strategic vision?
   Yes   No

5. Do your key employees understand that strategic vision?
   Yes   No

6. Could each of your employees write a one-or two-sentence statement of that strategic vision without consulting you or each other?
   One Person Could   Some Could   None Could   All Could

7. Do they use this vision statement as an effective guide for the choices they make relative to organizational business?
   Very Effective   Somewhat Effective   Not Effective

8. Is your strategic vision effective in helping you make organizational choices?
   Very Effective   Somewhat Effective   Not Effective

9. Have you ever sat down as a management team to try to obtain consensus as to the future direction of your organization?
   Yes   No

10. Was consensus obtained or are there still different versions of what the organization is trying to become?
    Total Consensus (Single Vision)   Some Consensus (Fuzzy Vision)   Little Consensus (Different Visions)

11. Do you have a separate process of strategic thinking to determine what you want to become as opposed to how you get there?
    Yes   No

12. What is your one- or two- sentence statement of the strategic vision of this organization?

APPENDIX B

Please answer the following questions as honestly and completely as you can. It is important for you to answer them independently. Please do not discuss these questions and answers with others in your organization at this time. We are interested in your own personal opinion.

1. Does your organization have a well articulated, clear statement of its strategic vision (who they are and what they are here to do?)

   Yes_____ No_____

2. Could you write a one or two sentence statement of that strategic vision?

   Yes_____ No_____

3. If so, what is that one or two sentence statement of the strategic vision of this organization?

   NOTE: Remember now, this is your own view of your organization's strategic vision.
   Just say it the way you see it!

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How Do Selected HRD Professionals View The State of the Succession Planning Art?

William J. Rothwell
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Succession planning (SP) is commanding renewed attention in corporate America. In this article, the author presents a portion of the results of a recent survey of 350 HRD professionals. The article focuses on the survey results regarding opinions about SP. The researcher examined what HRD professionals perceive about top management attitudes about SP in their organizations as well as what HRD professionals feel about it. Not surprisingly, the research results revealed that HRD professionals in organizations already operating a succession planning program believe top management attitudes about SP are more positive than in organizations not operating a SP program. More surprising, however, is that the research revealed that the highest frequency of respondents from organizations with and without SP programs perceived such programs to be "critically important to this organization at this time."

Decision-makers in many organizations have awakened to a startling realization: they are not sure where the next generation of top management leaders will come from. The reason is that downsizing, along with the increasing use of temporary employees at all levels and a decline in employee loyalty, has led to a crisis in that it is not always apparent who will lead the corporation tomorrow. As one consequence, many decision-makers have concluded that they cannot forever depend on executive search firms to find the right person with the right skills at the right time to fill every critically-important leadership vacancy. To ensure leadership continuity and corporate survival, a better approach is to pay more attention to the development of internal talent and to the age-old question of succession planning.

Succession planning has profound implications for HRD professionals as well. In an age of diminishing resources, it only makes sense to invest resources for employee development in employees having the most future potential and the best track record of exemplary performance. But if it is not clear who those people are because the organization lacks a succession planning program or some other means of identifying promising talent to meet critical needs, then resources may be squandered on those with little or no potential or track record of success.

This paper examines the opinions of HRD professionals about Succession Planning. Based on the results of a recent survey of HRD professionals, the paper offers some key definitions related to Succession Planning, describes the research questions guiding the study, explains the methodology used to conduct the survey, and summarizes the survey results and conclusions. The paper concludes with recommendations for future research on succession planning.

Definitions

A good place to begin is with some important definitions:

- *Succession planning* means any effort designed to ensure the continued effective performance of an organization, division, department or work group by making provision for the development and replacement of key people for key positions over time.

- *Replacement planning,* which should not be confused with succession planning, is a form of risk management that is used to identify individuals to fill important

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vacancies that unexpectedly arise.

The important point to remember is that replacement planning is intended to ensure "backups" for critical positions that arise without notice. On the other hand, succession planning should be geared to cultivating everyone so they are preparing themselves for long-term advancement vertically (*up a chain of command*) or horizontally (*up a skill chain*).

Research Questions

To explore the state of the succession planning art, the researcher conducted a survey on the subject. The major goal was to assess the status of SP as a driving force behind organizationally-sponsored performance improvement interventions--such as training, education and development. More specific study goals focused around answering such questions as these:

1. What are the primary reasons that organizations sponsor SP programs?
2. How long have organizations operated SP programs?
3. What are the common characteristics of effective SP programs?
4. What groups are the primary targets for SP programs?
5. How effective are various methods for grooming individuals as perceived by HRD professionals in organizations sponsoring SP programs?
6. What do HRD professionals perceive to be the opinions of top managers about SP programs?
7. What are the opinions of HRD professionals about SP programs?

This paper focuses only on questions 6 and 7 above. The answers to the other questions will be published elsewhere.

Methodology

The researcher began the study by drafting a survey to address the research questions listed above. The survey was divided into four parts. Part I solicited background information about respondents; Part II solicited information about respondents' organizations that are presently operating SP programs; Part III solicited information from respondents in organizations that are not presently operating SP programs; and Part IV posed questions about SP issues to respondents in organizations that are *and* are not presently operating SP programs. This paper focuses exclusively on Part IV of the survey results.

How Was The Survey Prepared? Two HRD professionals reviewed the survey prior to mailing. The researcher revised the survey based on their recommendations.

How Was The Survey Conducted? In October 1993 the researcher selected a random sample of 350 HRD professionals from the 1993 membership list of the American Society for Training and Development and mailed the questionnaire on October 15, 1993. Approximately 2 weeks after the survey was mailed, a follow-up postcard was sent to the original list of survey recipients to encourage a response. Names were selected from the alphabetic listing of ASTD members. Consultants and academicians were excluded as their names were drawn for the sample. By November 30, 1993, the researcher had received 64 questionnaires--a response rate of 18%. (That response rate matches or exceeds similar cross-organizational surveys sent to random samples in recent years.) No effort was made to follow-up with nonrespondents.

Limitations of The Survey. The survey results should be viewed cautiously for several reasons. This study was limited by (1) a low response rate; (2) possible systematic bias resulting from the use of a random sample of members of the American Society for Training and Development; (3) a skewed response from manufacturers (49% of the total respondent group) and larger organizations (54% of the respondents were in organizations employing 2,000 or more people); and (4) no follow up with nonrespondents.

Results and Conclusions

Workforce restructuring has created a crisis in many organizations. Too few talented people are available to fill critically-important leadership vacancies. The researcher received 64 responses from 350 questionnaires mailed to a random sample of HRD professionals in 1993. Most respondents were from manufacturing--30 of 61 (49%)--and from organizations employing 5000 or more workers --25 of 63 (40%). Their job titles varied. In all, 30 respondents reported that their organizations "presently operate a succession planning program." All the organizations have experienced significant workforce restructuring in recent years. Most (18 or 64%) also indicated that a SP program had existed for more than 5 years in their organizations, that executives and middle managers were the primary targeted participants, and that the two most important reasons for sponsoring SP programs were (1) "identifying 'replacement needs' as a means of targeting necessary training, employee education, and employee development"; and (2) "providing increased opportunities for 'high potential' workers." The most important characteristics for an effective SP program was "establishing a means to appraise individual performance." The most effective method for grooming successors was planned on-the-job training.

Central to this paper will be a report of the following findings.

When asked "how would you summarize the opinions of top managers in your organization about a succession planning program?," the survey respondents provided the following responses:

Chart 1: HRD Professionals' Perceptions of Top Managers' Opinions about Succession Planning

Opinions *(Respondents could check more than one response:)*	**Organizations with formal succession planning programs** **N = 30**	**Organizations without formal succession planning programs** **N = 34**
They don't believe succession planning is worth the time required for it	*2*	*8*
They have no clue why such a program might be worthwhile	*1*	*7*
They believe that a succession planning program is worthwhile but are not aware of how to manage it efficiently and effectively	*12*	*10*
They believe a succession planning program is worthwhile and that a formal program is better than an informal program	*18*	*5*
I don't know what they think about a succession planning program	*1*	*8*
Other	3	-0-

Not surprisingly, respondents in organizations with a succession planning program had more positive perceptions about top management attitudes of such programs than respondents in organizations without a succession planning program. However, it was somewhat surprising that the most respondents in organizations without succession planning programs perceive that top managers "believe that a succession planning program is worthwhile but are not aware of how to manage it efficiently and effectively." That may suggest, then, that one barrier to the successful installation of a SP program is top managers' lack of training or awareness of the best ways to establish and operate a succession planning program.

When asked "how would *you* summarize your opinions about a succession planning program?," survey respondents--all HRD professionals-- provided the following responses:

Chart 2: HRD Professionals' Opinions about Succession Planning

Opinions *(Respondents could check more than one response:)*	**Organizations with formal succession planning programs** **N = 30**	**Organizations without formal succession planning programs** **N = 34**
I don't believe such a program is important.	*- 0 -*	*- 0 -*
I believe that other methods work better in identifying and preparing possible successors.	*-0 -*	*- 0 -*
I believe a succession planning program is worthwhile but other programs are more important for this organization right now.	*3*	*9*
I believe a succession planning program is important.	*10*	*13*
Succession planning is critically important to this organization at this time.	*17*	*15*
Other	*1*	*2*

As can be seen from the chart above, the highest frequency of respondents from organizations with and without succession planning programs perceived such programs to be "critically important to this organization at this time." Hence, though the respondent group of this study was limited in size, its members generally agreed on the importance of succession planning.

Recommendations for Future Research

Here are some recommendations for future research on succession planning in no particular order of implied importance:

- How well integrated are existing succession planning programs with training and development programs?
- How much do succession planning programs provide information to drive training and development for "high potential" workers?
- What breaking trends, if any, are evident in succession planning? How much is interest in succession planning tied to the aftereffects of downsizing and other forms of workforce restructuring?

- What evidence exists, if any, to indicate that succession planning is moving away from a ***replacement model*** (fill a critical position with a high potential) to a ***talent pool model*** (develop many people for ***possible*** advancement ***both vertically and horizontally***) or to some other model (such as tying replacement plans to critical work processes rather than to narrowly-defined and bureaucratically-enforced "jobs")?

Conclusion

Interest in succession planning appears to be growing as organizations grapple with new ways to address critical staffing needs at all levels in the wake of corporate downsizing and restructuring efforts (see Ancona & Nadler, 1989; Esman, 1991; Francis, 1993; Fraze, 1988; Kerr, 1987; ***Long-term business success***, 1989; Novack, 1994; Potts & Sykes, 1993; Rhodes, 1988; Rothwell, 1994). As the results of this limited study suggest, one of the greatest stumbling blocks to wider use of succession planning may be that top executives lack the training or awareness about how set up and operate such programs effectively. This paper has described the results of a recent survey that indicates HRD professionals' perceptions about top managers' opinions on succession planning. This paper also disclosed HRD professionals' opinions on succession planning.

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Genesis and Continuance of an HRD Academic Program: A Longitudinal Study

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Reports on the creation and evolution of academic degree programs in HRD are largely missing from the research literature. This is one such report, undertaken in a university where several earlier degree programs and concentrations were merged and deliberately, formally reconstructed as HRD. Now in its fifth full year, the program was founded on a research base and continues to receive research scrutiny from quantitative, qualitative, and critical theory perspectives.

As recently as six years ago, members of the national HRD Professors' Network were still actively debating whether the college and university-based human resource development programs across the U.S. offered or should offer a recognizably common core of studies. The debate seems to have subsided over the intervening years, partly as a result of publication of the 1989 McLagan study, *Models for HRD Practice*, as well as subsequent writing that has been based on that study.

However, the authors have felt that curriculum assumptions made on the basis of a taxonomy of what HRD practitioners currently do, cast primarily in the framework of "deliverables," would not adequately serve the interests of a new, emergent profession. It is not that the academic communities concerned with human resource development education can ignore "what is" in HRD practice, but that the challenges of the future seem to require skill-based programs to take on more reflective, theoretical, and integrated approaches to professional preparation.

HRD professors may be uniquely obligated to challenge the conventional wisdom of both practitioners and professors, seeking to unveil a profession that may be too much taken for granted in form and content, and too little explicated and understood from a research point of view.

While the text that follows reports longitudinal study specific to one university program in a metropolitan area of the southeast U.S. and does not attempt to generalize statistically to other locations, it is likely that implications for other HRD or HRD-related academic programs may appear. The need for further study is readily apparent. If it is true, as the researchers suspect, that researchers grounded in HRD practice are so universally concerned with what HRD does that there is less attention paid to what root metaphors, potentials, and recent experience lie at the heart of the profession, then a systemic research/reflection methodology for study of the profession itself is pertinent.

Methods

General System Theory (GST) is the conceptual framework of the study, invoking a complementary use of quantitative, qualitative, and critical theory research traditions. These three traditions coexist in GST, according to Flood (1990), and may be claimed for use singly or in any combination by systems researchers. Using multiple methods tends to collect richer data and allows cross-validation of findings from different sources. It seems especially useful in longitudinal study of shifting populations and circumstances.

The six-year study (1988-1994) reported here has been undertaken in four intensive phases. These are 1) research-based curriculum development and implementation, 2) alumni and current student survey research, 3) market survey research, and 4) qualitative study through alumni interviews. An initial market feasibility study prior to 1988 had already identified the need for

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HRD curriculum development and had obtained university support for undertaking large-scale change in HRD-related degree offerings.

Phase one: (1988-90) Curriculum Development and Implementation. The curriculum development phase of the study involved the collection of HRD practice statements from eleven different competency studies in North America, including the 1989 McLagan study cited above. At the same time, the researchers built on earlier curriculum comparison studies conducted by Pace (1984, 1988). A new review of more than 100 college catalogs was undertaken, to identify academic programs that were considered, by several criteria, to be most closely aligned with the view of HRD as an identifiable and integrated field of practice and an emerging new profession. As a result of the catalog study, charts showing frequency of occurrence of various types of course content were drawn up for comparative analysis. Few programs were found to be comprehensive in nature, since most had grown out of allied disciplines such as vocational and career education, adult education, management education, instructional design, organization studies, etc., and were not explicitly created as stand-alone HRD programs.

A group of prominent Human Resource executives from area corporations, non-profit, government, and educational organizations was convened to identify critical curriculum components an HRD program should have. In an afternoon of structured group interviewing, aided by index cards they wrote and posted on a long wall, these key informants reached consensus on "foundations," "other courses," and "business topics." In the process, they split human resource management from human resource development visually and decisively. This was an enlightening demonstration that curriculum overlap in the two areas, if any, would need to be consciously planned. To a critical theorist, it also raised the possibility of divided loyalties, culture and paradigm differences, technical language barriers, and political dominance/subordination issues in Human Resource departments where HRM and HRD are combined.

A cumulative list of more than 1,100 competencies derived from all sources was next sorted for duplication, assigned by faculty consensus to appropriate degree levels, and finally examined for systemic meanings/ relationships in HRD theory and practice. This competency sort was later conceptually validated by five different focus groups comprised of experienced practitioners. These were volunteers from ASTD and NSPI memberships, who agreed to indicate percentages of time they spent carrying out several categories of tasks and then fill in the detail of those tasks in the focus groups.

In the implementation acts of this phase, curriculum content was conceptually modeled to represent HRD as a new profession, a profession to be treated as an undivided whole and not as an aggregate of roles or sub-specialties. Choosing an orb or "globe" to represent all of HRD made it possible for the first time to separate the profession visually and conceptually from HRM. It also suggested the idea of cross-sectioning the profession on any radius to discover what was going on in the field universally, at any point in time. This, it was proposed, would yield the essential requirements for professional preparation and practice.

In this conceptual modeling, instructing/training delivery, designing systems (including instructional systems), advising/coaching (including career developing), HRD managing, and HRD consulting/research emerged as quintessential, parsimonious categories. Subsequently, a distinct professional identity, deliberate academic enculturation, and "futuring" for the profession seemed to be enabled as never before, simply by having shifted the HRD gestalt-forming process from piecemeal mapping of practice toward painting an integrated landscape of the field.

Courses were created to reflect this reframing and new faculty were hired to help carry out more integrated programming. Courses continue to be defined in part by relevant competencies, but there exists also a dominant professional view that connects courses to each other and to HRD as an identifiable whole.

Phase two: (1993) Alumni and Current Student Survey. This part of the on-going study was undertaken as soon as it was possible to obtain a mix of students/alumni studying under the new HRD curriculum and of matriculants who had done all or most of their degree work in the old programs. The entire known population of current participants and alumni in both old and new programs was the sampling frame. This included masters (131) and doctoral (45) students and a few bachelor's level students (15) as well. Results of this study were obtained during 1993 and summarized early in 1994. However, researchers refrained from publishing these results pending the end of the transition period and completion of the last two phases of the longitudinal study.

The survey instrument consisted of 81 questions eliciting data in seven categories: 1) demographics, 2) employment, 3)job satisfaction, 4) Georgia State University HRD program satisfaction, 5) degree of confidence in understanding the whole field of HRD, 6) degree of identification with the interdisciplinary view of HRD, and 7) other (e.g., motivation to enroll in the programs, knowledge/ use of the Human Resource Information Systems data bases for research, etc.). Response was facilitated by the use of a single, front-and-back standard NCS response form which could be electronically scored. To keep respondents on track, questions were visually represented on the form line by line, although the respondents were also given a more complete version of the question to read before marking their form. Students were also encouraged to write additional comments on an accompanying form.

The response rate, ultimately reaching 50% (191 from 382 mailings), was known in advance to be constrained by the probability that many alumni addresses might not be current. This proved to be the case, clearly preventing a full census of opinion. The researchers assume that the responses received are at least representative, if not exhaustive.

The survey was piloted in at least seven different versions prior to the mass mailing. The goal was to balance richness and perceived relevance of data with ease of administration/analysis. Students assessed the influence of the degree programs in terms of their initial hire as HRD practitioners and in terms of advancement in the field. Most were well satisfied with their study experiences, and those who had been placed in internships at the masters level under the new curriculum were understandably pleased with this innovation. Of some concern to the researchers is the fact that more than a third of the graduates still have difficulty viewing HRD as a multidisciplinary though unitary profession, whether they came through the old program or the new one. These and other results pertinent to the researchers and potentially to other HRD professors will be reported below in greater detail.

Phase three: (1994) Market Survey Research. A one-sheet market survey was developed with the assistance of a marketing consultant, as part of a strategic plan for HRD academic programming and future activities of the Georgia State University Center for Human Resource Development. This survey sought to assess the degree-seeking, continuing education and HRD service needs of more than 5,500 human resource constituents in the State of Georgia. No attempt was made to broaden this research to the national or international level, although this may be a goal for the future. The most significant finding thus far, with results still arriving, is that more than 500 HRM and HRD constituents have considered it important to express their hunger for connection or, as the case may be, reconnection to the university and its HRD programs and expertise.

Response rate (over 10%), while much below that expected for academic research with well defined sampling frames, is nevertheless on the mark of what is normally expected in broad-based market research. Details of market findings are also discussed in the results and conclusions, with reflections on implications not only for one university but perhaps also for other universities having HRD program offerings.

Phase four: (1994) Qualitative Study Through Alumni Interviews. Fifteen in-depth interviews of HRD program alumni have been completed, each lasting from 45 to 90 minutes. Half of these were audiotaped to augment response tallying by the graduate student who prepared and conducted the interviews. Again, a mix of old and new program matriculants was sought. The interviewer was a novice in the field, except for one or two introductory courses taken at the master's level. He was assumed not to have developed either strong identification with the field or strong loyalties to any particular faculty member. From comprehensive lists supplied by the researchers, the interviewer selected people at will, depending on who could be located easily and who agreed to the interview.

The structured interview questions explored job titles and career history, reporting relationships, and opinions about the program of study they had completed. In a question prompted by the phrase, "If I had it to do over again..." respondents suggested program enhancements as well as decisions they might personally have made differently if they could relive their time in school. They were asked how well their degree program equipped them for work since graduation. Respondents also speculated about what future directions HRD might take, and reported on several work satisfaction factors that either discourage them or "get them up in the morning." Other questions asked whether they looked for Georgia State HRD graduates when they needed additional hires or interns, how they upgrade their own skills, and what post-graduate resources they would like the university to provide. The final question asked what advice they had for students just entering the new HRD program.

Interviews were completed in December, 1994. No bachelor's level students were included among the respondents, but other degrees and both old and new programs were represented. Field notes have not been submitted to full-scale ethnographic analysis, but recurring themes are visible. Most prominent are feelings of general good will toward old and new programs, and the expressed need for on-going affiliation with other HRD professionals in a university-sponsored milieu. Additional findings of this final phase of inquiry are discussed below.

Results

The data from all data collection activities over the six year period remains consistent, with few variations. Students do seem to be a little clearer in 1995 about what HRD as a field of study offers to them.

Student and Alumni Survey. The 191 respondents were almost evenly divided between current students and alumni. Of these, 108 identified themselves as new program students and 69 said they had entered the programs before 1989 when the new curriculum took effect. Respondents were 25.8 percent male; 74.2 percent female. About 80 percent were Caucasian, 10 percent Afro-American and another 10 percent Asian, Hispanic or other minorities. Four out of five of the respondents were over thirty years of age and most (1/3) were between the ages of 40 and 49. Older respondents (past 50) and younger respondents (in their 20's) each made up 18.8 percent of the response.

All major employment/industry sectors were represented. About 47 percent worked in organizations with fewer than 500 employees, and 25 percent worked in organizations with 1,001-5,000 workers. Several were either consultants in their own businesses or not employed at the time of the survey. Most frequently cited job titles, in roughly equivalent proportions, were instructional designer, trainer, and consultant. According to 2/3 of all respondents, what they do most are front end analysis, instructional design, writing instructional materials, evaluating, delivering training, and advising/coaching. Less than 1/3 said they performed HRD management responsibilities like HRD staffing, budgeting, etc. Even fewer had actual job titles reflecting formal HRD management status.

Education and health care sectors used the HRD program to upgrade skills or academic credentials, as indicated by the response of an academic dean, directors of academic or financial affairs, admissions or placement counselors, a health care department head, etc. In the corporate world, an account executive, director of marketing, and VP/corporate officer appeared on the write-in list of titles. The low end of the employment spectrum showed that clerks, waitresses and other unsalaried employees also look to the HRD program to develop themselves personally and to enhance their employability. Most respondents who work in organizations report to a director level or below; few report to a VP or higher.

As might be expected, the higher the degree, the more likely it was that respondents advanced within the HRD field during their programs. But 25 percent of all respondents advanced within the field during their tenure in the program. More than 90 percent were employed when they entered the program, but only 43 percent of these were in HRD initially. At the time of the survey, however, more than 80 percent were working in HRD. Of those making the shift to HRD employment, more than 1/2 were able to find such employment within six months of graduation.

On job satisfaction variables, the highest level of satisfaction was found in relationships with co-workers (84 percent). Next in order were interesting work (74 percent), independence (73 percent), work hours and creativity (each 67 percent). About 60 percent were satisfied with pay level, and roughly 1/2 found executive support satisfactory. They were least happy with financial support for their work (44 percent) and advancement opportunity (35 percent). Since highly and somewhat satisfied categories were collapsed in this analysis, the findings should be taken as broad indicators rather than evidence of perfect satisfaction in any category. In terms of gender, women reported less pay satisfaction than did men.

Respondents indicated that the expertise of faculty, faculty feedback provided to them, critical thinking, and course relevance were congruent with their needs and constituted their greatest HRD program satisfactions. Less than 1/2 felt that faculty support was adequate, however, and slightly more than 1/2 thought that the job tools provided were sufficient. These views may be colored significantly by the fact that all of the students in the alumni/student group surveyed (1/2 of the respondents) knew they were enrolled in a program that was in transition. Students were still uncertain whether the changes would serve them well.

Significant differences found on variables crossed with old program/new program responses are suspect because of multiple tests. In a number of Chi Square tables some cells have expected frequencies of less than five, making the values unstable. Further analysis could collapse categories and provide additional information, but this seems unproductive. A number of intervening variables (e.g., transfer of some "old" students to new catalog rules, addition of two new faculty, departmental and college reorganization) might have influenced students' perceptions more than curriculum change variables did.

Gender difference on reasons for entering the HRD program showed that men sought to enhance skills and refocus their careers, but women were seeking career change. Implied is the probability that men tend to be in the HRD field upon school entry, and women study to position themselves in the field. Only eight percent said they enrolled to prepare for their first career. Doctoral students/alumni identified with an interdisciplinary view of HRD more often than did respondents at lower academic levels. Overall, 92 percent held this view, but only 56 percent did so strongly.

Market Survey. Response rate continues to climb. Of 533 responses tabulated, 57 percent were from the corporate sector, 10 percent from professional firms, and nine percent from educational institutions. Non-profits were represented by eight percent, government by five percent, military by .4 percent, and other by eight percent. Of the respondents, 37 percent were human resources staff or trainers, more than 1/4 were line managers, 11 percent were from professional firms, and 10 percent were CEOs or other top executives. Much smaller percentages were recorded for external recruiters, self-employed, academic administrators and teachers, unemployed, sales or technical employees, hourly workers, students, and other.

Most were in the 35-44 or 45-54 age range (38 and 32 percent). Twenty percent were 25-34, one percent were 18-24, and eight percent were over 55. Most had masters or bachelors degrees (44 and 37 percent). Ten percent held doctorates. nine percent had some college, and less than one percent had no college experience. Fifty-nine percent were female, 41 percent male. They worked in organizations about evenly distributed over a range of those having less than 10 employees to more than 20,000 employees. They also evenly represented companies having revenue streams from under one million to more than one billion.

What this diverse group said they wanted were customized degrees offered on company premises (65 percent), an executive HRD degree (78 percent), university sponsored seminars and conferences (93 percent), and an accessible HRD resource library and help desk (85 percent). More than half (58 percent) thought a specialized HRD Center unit focusing on international HRD issues would be helpful. There was even greater support for a university publishing unit for HRD newsletters, training materials and information (68 percent).

Respondents were also asked whether they personally were interested in each of these services. All categories received strong support. At least 20 percent said they would personally be interested

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in an executive HRD degree program, for example. All these data suggest that the university sits in the midst of very extensive unmet HRD service and program needs.

Interviews. Five men and 10 women graduates of old HRD-related and new HRD programs were interviewed. Six interviews were conducted by phone; the other nine were face-to-face. Three of the respondents held administrative positions in educational institutions. Four were external consultants: two were in needs assessment/instructional design, one in career and outplacement counseling, and one in team building and multi-cultural diversity. Three key informants from corporations were at managerial level. All of the remainder had organizational positions with a training and development focus. Except for reporting of direct quotations, all responses to the 19 questions and subquestions are combined.

Respondents said they had been working in the HRD field from 3 to 20 years. Length of time in the field was not well correlated with the job title or level of responsibility indicated. One person indicated reluctance to say that he/she was actually working in HRD, feeling that college admissions counseling was not a main-line HRD occupation.

Reporting relationships ranged from office manager to site manager, VP for manufacturing, or president of a company. Those to whom the respondents reported also included directors of a Center, Human Resources, and an EEO office. Consultants obviously change the reporting relationship with each new client.

Eight of the respondents said there had been little change in their employment since graduation and one said the question was not applicable (unemployed). But six had gained the position they held in their current companies since graduation. One had changed companies and increased salary by 40 percent.

An increase in responsibility was also notable. One person said that there was deeper and wider responsibility for HRD, another said the increase involved doing "four people's jobs." One had added responsibility for academic accreditation, another added administrative responsibility, and two others added needs assessment and increased training responsibility. Four reported an increase of at least one additional person to help with HRD in their organizations, in one case, the "first new person in eight years."

Respondents rated several work satisfaction variables on a scale of one (low) to five (high). Lowest satisfaction registered on the opportunity for advancement variable, with a median rating of 2.7. Three other variables fell below four: level of pay (3.45), executive support for their function (3.6), and financial support for the function (3.8). Those interviewed were most satisfied with working hours (4.33) and level of independence (4.3). Level of creativity, level of responsibility, and relationship with coworkers were not far behind (4.2, 4.2, and 4.1 respectively).

The qualities they or their company look for in a new graduate of HRD are a mix of good communication skills; professionalism; flexibility, vision and strategic thinking; initiative, determination and perseverance; commitment to life-long learning; and the ability to ask good questions. In terms of job skills and knowledge, they would like someone who has had a solid internship experience, someone who is well-read and knows research, and someone who can plan and carry out needs assessment, instructional development, training delivery, and evaluation. Additionally, the new graduate should have general knowledge of development in a business setting, analytical skills, and business sense/knowledge.

In retrospect, each individual would have added or strengthened some of the components of the program where they themselves felt weakest. Some wanted additional work in career development, counseling, and human relation skills; others wanted more economics, management or human resource management coursework; and still others felt the need for more instructional design and design technology (e.g., computer based-training) skills and information. One mentioned presentation and marketing skills. What they would most like to have subtracted was the educational research course required of all graduate students in the college.

Respondents get most of their life-long learning updates from networking, training seminars, and other types of continuing education they seek or their company offers. To learn new things, they use books and journals more readily than they use the professional associations in their field.

They read popular training magazines most often, but there is also a range of research journals that they consult.

They see HRD becoming a stronger force for change in the future, with HRD professionals acting outside the traditional Human Resources structure. Technology will play a role, as will the need for retraining and the reorganization of companies. The need for HRD was thought to be growing in the school systems, partly because of changing characteristics of the workforce. Some respondents saw a need for HRD professionals to "push into management" and attach themselves to a profit center. In spite of optimism, two respondents saw the perennial danger that training can become a victim of the economy or of executive short-sightedness, and one person insisted that, while entrepreneurial opportunities are limitless for HRD graduates, there is a threat from "charlatans and plagiarists" who adopt the HRD label. This requires that "GSU must graduate highly certified, visionary, deep HRD generalists." Unfavorable perceptions of HRD and lack of professional identification with the field are still viewed as threats to HRD.

Eleven of the respondents thought that seeking a Ph.D. might be in their future; four of these were quite definite about it. Five might seek a second master's degree. But the respondents wanted other things from the university immediately. While they like the variety and people empowerment aspects of their jobs, they are eager for opportunities to converse with HRD faculty, students, and other graduates like themselves. They would like to be able to pursue certification in a variety of professional practice areas. They had many suggestions for reconnecting with the program from which they graduated, including alumni meetings, newsletters, help lines, and even career development help for themselves.

Conclusions

Indications from all research phases and sources of data are that students in HRD programs at this university like the field, their programs of study, and their faculty. With increasing enrollments (even though the bachelors level program has been deactivated) the reputation of the university HRD degree programs among practitioners appears to be solid. Students and alumni nevertheless have many suggestions for improvement, and primary among these seems to be the need for continuing relationships with the university even after graduation.

The insatiable need HRD professionals feel for life-long learning seems to be one motivator. Perhaps the professional loneliness of HRD practitioners is another. There does not seem to be any research documentation of this loneliness, but practitioners often speak of it. Relationships with coworkers are a great satisfaction, but as one-of-a-kind professionals in many organizations, HRD people often must find peers with shared interests outside their own workplace. One informant mentioned the need to benchmark with other HRD units; all informants seek better ways to keep their knowledge and skills at the cutting edge of the field. They see networking as obligatory.

While quantitative results show no defensible differences between old and new program graduates, there are qualitative comments that suggest that many old program graduates do not feel closely aligned with the broader, more generalist conception of HRD curriculum that was adopted in 1989. New program graduates tend to appreciate the increased breadth, particularly at the master's level. To illustrate, one person reports, "As I began to consult primarily in the HRD field, I am very glad the HRD program was comprehensive and integrated all the elements of the profession. I feel I have been very well equipped with skills and tools." Another wrote from her new HRD management position in another state: "[Our] HRD program has an excellent national reputation. I [have] realized my knowledge and skills are far superior to those of other HRD professionals here."

Testimonials are far from telling the whole story, however. Since the 1993 quantitative study, economic, social, political, and organizational changes have been rampant. Increasing numbers of students seeking jobs or career changes, seeking interdisciplinary fields of study, or merely seeking to make a difference seem to have been attracted to the HRD program under discussion. In the most recent academic quarter (of four) in this university, 40 new students were accepted at the master's level, the highest level of demand in the history of HRD at this university. Since reclassification in Petersen's Guide to Graduate Programs, international student enrollments have steadily increased. These are visible changes. But there is much less clarity about whether students are arriving with more or less experience in the field or whether graduates are getting better or different kinds of jobs since 1993. With the baseline study reported here, such changes, if any, may be more readily assessed in the future.

At the doctoral level, strictly limited enrollments have encouraged students with particularly high levels of HRD or HRD-related experience. The impact of this change has yet to be seen. Some look forward to achieving more consistency in professional preparation and stronger HRD professional identification, but others may be concerned that their individuality and creativity will be sacrificed to the detriment of the whole field. The question for academic programming is: what kind and what amount of diversity can be sustained at the doctoral level in programs explicitly aimed to provide leadership for future generations of HRD practitioners?

HRD careers have begun and others have flourished as a result of the respondents' academic studies. A substantial number of potential students would be interested in degree programs offered in alternative formats.

Slightly more than 10% of the respondents to the mail survey of current students and alumni were from minority populations. This is not a high percentage in a city that is more than 50 percent Afro-American. Nearly three-quarters were also female, raising the question whether the field is becoming "feminized. Certainly these are indications that if racial and gender balance is desired, male and female Afro-Americans and adult males of all hues need to be a focus of future recruiting efforts. The market survey, with males representing almost half of the respondents, seems to indicate that at least a gender balance could be achieved if new ways to deliver programs are found.

Some Final Thoughts

The researchers believe that this is the first study of its kind in the history of HRD academic programming. This university has had a unique opportunity to begin anew and create a freshly conceived, integrated, research-based generalist HRD curriculum. Because of this, the program forms a natural laboratory for the study of the HRD profession as a system, monitoring its system integrity (wholeness), existing or potential splintering, and adequacy of its responsiveness to changing theory and practice needs. It is believed no longer useful to imply that HRD is a field in search of itself. Instead, researchers may profitably begin with the assumption that HRD is a system, not only capable of incorporating but even required to enfold a variety of models and metaphors illustrative of its whole system properties.

This longitudinal study is exploratory and does not claim to be definitive. It has looked at several elements that may help to encourage a whole-system view of the HRD profession through academic programming. While the qualitative data is too voluminous to report here in any detail, it suggests that the new HRD professional needs to understand and develop a personal comfort level with the content and perspectives of the whole profession before specializations are undertaken. At the very least, this self-study may point the way for program research in other universities, as much by its omissions as by its inclusions.

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THEORY AND PRACTICE ON PREPARING HUMAN RESOURCE DEVELOPMENT PROFESSIONALS

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Theory and practice in college and university academic credit programs preparing Human Resource Development (HRD) Professional Practitioners have seldom been addressed in the same places or times. This paper: Clarifies the terms, theory, practice, academic program, learning, learning organization; traces some history of the issue; provides a case illustration of how an HRD professional prepared in a program advocating a supportive connection between theory and practice; modeled that in his own professional career and developed support within the university setting.

Theory and practice in college and university academic credit programs preparing Human Resource Development (HRD) Professional Practitioners have seldom been addressed in the same places or times. On one hand, there are those (Devlin, 1939, pp. 1291 and 1732; Jarvis, 1990, p. 338) who say the two ideas have been and should continue to be kept totally separate, having their own domains of operation. On the other hand, some (Knowles, 1962, in Dixon, 1991, pp. 18-19; and in Brookfield, 1988, pp. 43-49) advocate interaction between theory and practice to the extent that they be congruent in so far as possible within the abilities of those in charge of the preparation process. In addition, others (Cervero, 1991, in Peters, pp. 19-36; Dixon, 1991, pp. 31-45) suggest a variety of relationships: ignoring theory, using theory and practice for emancipation, letting theory be the foundation for practice, recognizing theory or theories which guides ones practice, and understanding the theory and practice relationship as a function of the types of research permitted in various contexts.

Needless the say, with this disparity of viewpoints between theory and practice in preparing HRD professionals, few, if any, attempts have been made to bring them together at all, or in any coherent way. Nevertheless, expressions of concern, in academia (Benn, 1994; Cervero, 1988, p. 81) and in corporations (Kouzes, 1993, p. 47) imply, if not directly assert, the importance of addressing this at least to the extent academic institutions have any stake in the preparation. Additionally, a major component which involves academe in the preparation focuses upon learning. Some of these expressions of concerns are made also in response to HRD conference presentations conducted by HRD professionals. They take the form of: "Why do HRD professionals violate everything they know about how learning takes place?" or, "Why don't we HRD professionals practice on ourselves what we theorize about how we learn?" or, "Why don't we practice what we preach?" or, Why don't we walk the talk?" or, "Why aren't HRD professionals' actions consistent with their words?" or, "Why don't they do what they say"? or "Why should I stay in that session and tolerate being talked 'down to' like a little child?" or, "Please, no more long lectures!" or, "I want to 'actively participate' in learning rather than just 'passively receive' teaching!" The list could go on, which adds up to the issue and question of an appropriate theory and practice relationship. Pondering this prompts the observation that a definition of terms could help clarify direction of the discussion.

Definitions

In strict dictionary definition, Devlin (1939) distinctly separates theory and practice: "Theory is a doctrine or scheme of things which terminates in speculation and contemplation without a view to practice;" (p. 1732) and, "Practice is actual performance distinguished from theory." (p. 1291) Although these are general definitions, Jarvis' (1990, p. 338) definitions which reflects an HRD perspective not only coincide with the above, but further separates the two. He asserts that theory focuses on knowledge which comes from theoretical analysis, and practice focuses on knowledge which arises from *empirical evidence* through the senses.

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The separateness of theory and practice by their definitions, juxtaposed with the concerns and discontent on their separation in actual practice, may not be enough justification to warrant making a connection. After all, in the interest of presenting more than one point of view, there are many positive comments and evaluations that are made on HRD graduate or undergraduate programs and conferences as they are currently being conducted. Nevertheless, there are other aspects to this research paper which could help justify bridging the gap. This paper focuses on a discussion of college and university academic credit programs concerning the theory and practice of preparing HRD professionals. Consequently, definitions of HRD, program, learning, and learning organization may shed some additional light on the possibility of a connection between theory and practice being needed.

Human Resources Development according to the American Society for Training and Development is defined as: "The integrated use of training and development, organization development, and career development to improve individual, group, and organizational effectiveness." (Marquardt, 1993, p. 7) Also indicated are the primary interventions of each: Training and development--planned individual learning of their work roles; organization development--influence on the relationship of individuals and groups to impact the organization as a system; and, career development--influence on self-knowledge and processes that effect optimal matches of people and work. Hence, in preparing HRD professionals, for the eleven roles and thirty-five competencies needed by HRD professionals, a university or college academic program of planned learning to accomplish this is our focus. But how is program to be defined?

According to Jarvis (1990, p. 89) and Marquardt (1993, p. 8) program in this context is identified much the same as the traditional word curriculum and carries many of the same elements such as objectives, content and sequence of activities. This, then suggests that program tends to mean the entire range of learning experiences provided by an educational institution.

A much clearer articulation of the particulars which "learning experiences" encompass is given by Knoll (1989, in Titmus, p. 29) using the German Education Council definition meaning the organized arrangement of learning processes and content with regard to certain aims and objectives which include techniques, behavior or type and degree of certain skills and aptitudes, or of knowledge. This could imply such questions as: Which knowledges, understandings, aptitudes, skills, interests, attitudes, values and behavior patterns is this "Learner - *who is an HRD professional practitioner in preparation*" to acquire? With which subject matter and content is this "HRD professional" to be confronted? What roles, competencies, and performances is this "HRD professional" to learn? When and where is this "HRD professional" to learn? How is this "HRD professional's" needs to be determined? By which learning steps and techniques, in which manner, with the aid of which materials is this "HRD professional" to learn? How is the attainment of the aims and objectives by this "HRD professional" to be determined? It could be assumed that to answer these questions will necessitate knowing various theories and schools of thought which will inform the selection of the very best practices or learning/teaching techniques which the HRD professional practitioner has at his/her command and level of competency.

To carry this a step farther, learning is (Senge, 1990, p. 13) a shift of mind, and (Knowles, 1989, p. 148) is what goes on inside learners as they undertake to gain or acquire new knowledge, understanding, skill, attitudes, values, and interests. The "what goes on" could be described as: perceiving--sensing and feeling concrete reality, thinking or reasoning abstractly; and, internalizing or processing--making it a part of ourselves by actively jumping in and trying it, or reflecting on and watching what's happening, so the HRD professional, whom it would be safe to assume is an adult learner, would have going on inside of her/him the perceiving and internalizing of new knowledges, understandings, skills, attitudes, values, and interests.

Lest we fail to complete the definition loop, Watkins and Marsick (1993, pp. 8-9) suggest that the learning organization is one that learns continuously and transforms itself. This means learning: Takes place in individuals, teams, organizations and society; is a continuous, strategically used process--integrated with, and running parallel to, work; results in changes in knowledge, beliefs, and behaviors; enhances organizational capacity for innovation and growth; and, has embedded systems to capture and share the learning.

Consequently, an appropriate theory and practice connection in college and university academic credit programs preparing HRD professionals as learners and learning organization creators is the topic for consideration. Sub-questions implied from this are: What benefit can one expect to result from studying the relationship between theory and practice in HRD preparation programs? What determines the position one may take on the theory and practice relationship in preparing HRD professionals? What contextual/organizational connections within the university or college help advance an HRD preparation program? Although these questions we considered to be foreshadowing issues of the study, the following speculations or hypotheses emerged: studying the theory and practice connection helps develop a clear foundation upon which to base ones HRD preparation program; congruence between testing ones experience against what is read, perceived, reflected upon, abstracted and experimented with determines ones position regarding preparing HRD professionals; and, each contextual linkage with others in the university helps stabilize and advance an HRD preparation program.

Historical Background

One of the earliest references relating to the preparation of HRD professionals (Houle, in Jensen 1964, pp. 69-83) makes no mention of a connection between theory and practice. In the standards for graduate programs which appeared in 1986 (Brookfield 1988, pp. 234-241) the connection is very loosely made by indicating that the full-time HRD faculty member needs a continuing commitment to HRD theory, research, and knowledge of current practice. It should be noted that no connection between theory and practice in the faculty classroom behavior is indicated or required.

Comparing university adult education in England and the USA, (Taylor 1985, Preface) theory and practice are mentioned regarding the liberal school of thought in relation to the general field of adult education with no reference to preparing HRD professionals. Knapper (1985, pp. 106-120) outlines some innovative instructional methods which could be practiced by HRD professionals thought by some to be consistent with adult learning theories that emphasize a high degree of learnerparticipation. (also Brager, 1993, p. 12). Although Bright (1989, Title) addresses the theory and practice issue, the argument is limited to the study of adult education in its relationship to epistemology. Usher (1989, Title) takes the view that theory and practice are not inextricably connected, but in a captive triangle with research. His argument is directed toward the field in general, but can be applied to preparing HRD professionals.

Moreover, McCullough (1987, p. 53) supports the connection by indicating that the professional development of an adult educator/trainer will be greatly advanced by letting others know what competencies (which are identified by the theory) you are trying to improve and asking for feedback on your progress. Collins (1991, pp. 21-39) on the other hand, argues that the preparation of HRD professionals is not helped by the current obsession with technique without the vocational commitment to engagement in critical, ethical, and political issues. Outlining the changing relationships between theory and practice during nearly thirty years, Cervero (1991, in Peters, pp. 19-41) asserts that currently there is a great disparity between theory and practice in preparing HRD professionals frustrating practitioners while at the same time concerning theoreticians.

Soder (1988, pp. 299-305) thinks that by studying the way other professions educate and prepare their professionals, educators can learn valuable lessons for the ways people are prepared to enter the ranks. In his study of how these professionals are prepared, there is no mention of any connection between theory and practice in the process, despite his findings that there are fifteen features in their training programs which are commonly shared with the professional education of educators. One could conclude that either that aspect of a preparation program has been inadvertently overlooked, or it has been considered unimportant and irrelevant to the extent that no space or time should be devoted to its consideration.

Almost by accident, or at least implication, Marsick and Watkins (1994, p. 114) emphasize the importance of a theory and practice connection within an organization, citing an airlines preparation and continued daily treatment of professional flight attendants. Emphasizing that an organizational culture of disrespect and fear squelches learning, they underscore the fact that the American Airlines threat in response to the 1993 Thanksgiving Holiday Season flight attendant strike, to hire replacement "scab labor," dealt a blow to attendant "self-respect," and fear of job loss. (Kilborn, 1994, in Marsick, p. 114). It is not hard to conclude that disrespect and fear are not earmarks of a "learning organization," and a learning organization is one of the results that seems important to develop and support in an HRD professional preparation program.

"Do what you say you will do," (DWYSYWD) is the "critical difference" of what leadership credibility is all about (Kouzes & Posner, 1993, p. 47), which is the bottom line of a theory and practice connection. Leaders, in a free society--in corporations, health care, religion, society, government, human resources development, etc., -- who are honest, competent forward-looking, inspiring, credible and trustworthy, gain commitment and are followed by many other people (1993, cover jacket). And creating a learning climate--which is required of an HRD professional academic preparation program--is one building block in the disciplines of credibility (p. 51), and is an essential precursor of any successful organizational change efforts (p. 168). This is further supported on the individual level by Kolb (1974, p. 355), who found that individuals who are successful in achieving their change goals will be: more likely to feel that the control of reinforcement that they receive during the change process rests with themselves than those who are not successful; and, less likely to feel that control of reinforcement that they receive during the change process rests with those who are not successful.

There are some who think HRD professors--the people who have a major stake in designing and implementing HRD professional programs--have a unique responsibility to model the behaviors and skills they are trying to teach. Gardner and Korth (1994, p. 10) assert that most critical in the process is personal behavior. This could be illustrated by teaching on the importance of giving and receiving feedback, yet not being open to receiving feedback from the class in a constructive fashion, thus resulting in a decrease of our influence on student behavior. Consequently, we have not walked the talk. If participation in decision-making is an important concept to teach, yet we make arbitrary decisions affecting students, we lessen the likelihood that enhanced learning will take place. Although the words are not used by Gardner, consistency between theory and practice in the teaching/learning transaction is being emphasized. The saying seems true that if we do not model what we are teaching, we are teaching something else.

Bierma (1994, pp. 8-9) suggests that as HRD professionals the time has come to step back and evaluate our own learning and ask if we practice what we preach. Her penetrating analysis points up our need to: Get past the notion that practitioners are not interested in research or theory, and that academicians don't value what practitioners have to say, build a collaborative venture of relying on each others strengths; partner together in advancing HRD teaching, research and practice; turn the Academy of Human Resources Development into a truly collaborative learning organization; and formulate partnerships between theory and practice.

Rose, (1994, p. 6) in what appears to be a counter point of view and rebuttal to Henschke's (1992a, p. 9) rationale for practicing adult learning principles in conference settings, emphasizes that their is no research base to justify bringing the two together, so they will have to remain apart. Hayes (1993, pp. 173-186) also seems to support that position. Reischmann (1993, pp. 220-224) seems to brush aside the need for practice to be consistent with theory. However, Henschke (1993a, pp. 214-217) raises questions about what constitutes research, posing the possibility that research already exists in the area regarding the case Rose makes.

Perhaps the earliest published statement of support for a theory and practice alliance in preparing HRD professionals came from Knowles in 1962 (1991, in Dixon, pp. 18-19) and (1988, in Brookfield, pp. 43-49) with the publication of A General Theory of the Doctorate in Education. The purpose of the theory would provide guidelines for the development of a program for each degree. This theory was later enhanced (fleshed-out) and implemented by Knowles in the graduate programs in preparing adult educators and HRD professionals at both Boston University and North Carolina State University. A few specific enhancements were published on Knowles' theory of andragogy--which he defines as the art and science of helping adults learn (1980, pp. 1-63), competency rating scale (1990, pp. 236-243), and self-directed learning (1975, pp. 1-135). In 1980, Knowles was named to the HRD Hall of Fame. This was done through a poll taken from people in the HRD field. It was reported in Training Magazine, an international publication whose subtitle was at that time, "The Magazine of Human Resources". Beyond his publications, Knowles, the Adult Education and HRD Professor, seemed to exemplify as a co-learner and a facilitator of learning in others, the theory and practice connection in the academic program he developed for preparing educators of adults, and HRD professionals.

The ideas of how adults learn, which includes how HRD professionals learn, that were included but not limited to these statements, said that adults have a desire and capacity for: Actively participating in the learning process, having an extensive amount of control over their learning process, being treated as "grown-ups" instead of as "children", engaging in a variety of experiential learning techniques, discussion time being allotted in conjunction with a lecture if one is given, interaction with others in small groupings that helps them internalize information, hands-on practice, opportunity for each to share his/her expertise with others, raising questions about and exploring problems and various possibilities of practical application, self-directedness in learning, knowing exactly what step to take next in learning, innovation, excitement to carry a new idea forward, openness to new insights, an attitude of caring about what happens to students, clarity about differences between process and content; in short, meeting the adult learners' learning needs as they perceive and understanding them, as well as congruence between saying and doing or theory and practice in education: i.e. making the medium and the message coincide.

A Case Example

Cervero (1991, in Peters, p. 36) points out that although the relationship between theory and practice is an issue that will not be resolved, we should set our sights on understanding and being critical of the circumstances that shape our actions about this issue. Thus, it could help clarify for the reader the viewpoint of this author, to state that he received his doctorate in Adult Education and Human Resources Development at Boston University during Knowles' years there. Additionally, what will be presented regarding this influence supports the axiom that we teach how we have been taught. Consequently, the remainder of this paper is not intended to and will not resolve the relationship of theory and practice in the preparing of HRD professionals. However, this paper is meant to be descriptive of some ways which one person prepared as an HRD professional in the 1960's, has "played out" this relationship in the nearly three subsequent decades with the stated point of view, without trying to speak for others and their varying perspectives on the theory and practice connection. Thus, what follows includes not only the ideas on how adults or HRD professionals learn set forth in the last paragraph of the previous section, but also will add special ideas applied and used in each program described.

The contextual setting of this HRD professional's perspective is in his dual role as a continuing learner of how to become an HRD professional and as a facilitator of helping others become HRD professionals. He has a split appointment position at the University of Missouri, of Associate Professor of Education with masters and doctoral adult education and HRD students at the St. Louis campus, and Continuing Education Specialist in University Extension serving the individual and organizational learning needs of the general adult population. The University Extension position has been fulfilled in both rural and urban Missouri.

The earliest and most effective educational and innovative experiences of this HRD professional becoming a faculty member with University Extension was to participate in an inservice education orientation program for a seven week period. It was highly individualized. One could "shadow" other specialists as they worked and daily operationalized the role of University Extension faculty. Theory and practice were congruent. It was preparatory to the process that would be expected when one worked in the field setting in a very self-directed manner to implement her/his own ideas. This became a viewpoint expressed by Pinchot (1985, p. 22) when describing an entrepreneur, in which he suggested, that the one excited about an idea be responsible to carry it forward in the organization. However, this was counter to the apparent viewpoint of Hays (1993, pp. 173-186) when she seems to question the appropriateness of educators confronting learners with that kind of responsibility without having first determined their stage of readiness. However, Knowles (1975, pp. 31-38) emphasized that in his redefining the role of teacher, from content transmitter to facilitator of self-directed learning, he was in charge of the process, instead of the content, and would make decisions about procedures when the students couldn't, as well as helping them learn to take more responsibility for their learning.

In the early 1980's, this author was named associate professor of education in the HRD and adult education area at the University of Missouri-St. Louis. Responsibilities include teaching graduate courses on preparing HRD professionals, guiding and chairing masters' and doctoral students' programs, researching and publishing, as well as providing service to the university and the community. The courses taught regularly in rotation are: Foundations of Adult Education, Improvement of Instruction in Adult Education, and Curriculum Theory and Development in Adult Education. Classes are competency based (Henschke, In Dixon, 1991, p. 9). Learning contracts are used (Knowles, 1975, pp. 62-63). The classes are live laboratories for learning using various adult learning techniques to involve all the class interactively as illustrated by the genre of Leypoldt (1967, pp. 1-125) and many other sources, based and generated in research and/or practice (Rose, in Henschke, 1992a, p. 10), (Henschke, 1987a, pp. 55-61). The schools of thought or educational philosophies guiding the class processes are a mixture of humanistic, progressive, radical, behavioristic, liberal, and analytic (Elias, 1980, pp. 1-12), in that order of emphasis. There is a high degree of trust in the learning abilities of the students (Henschke, 1989, pp. 81-87). A critique by and feedback from students is always requested at the completion of each semester course to identify suggestions for improvement which are implemented the next time the course is offered (McCullough, 1987, p. 53).

Conversations with adult education and HRD colleagues have resulted in debates whether it is appropriate to put into practice the adult learning theories in university graduate courses, resulting in such comments as: "This is a university, you can't do that here; other professors would not tolerate our doing this; and, academic rigor would be sacrificed," (also Hays, 1993, pp. 173-186). Without attaching names of people or programs, one HRD professional in the Eastern USA who was practicing in the field for fifteen years, indicated in a personal conversation with this author that it was very distracting to him to be enrolled in a doctoral HRD program where the professors were not committed to theory and practice congruence in their teaching. This was especially problematic to him, knowing that his HRD consulting business would be gone if he did the same with his clients. Discussions with professors in the Department of Educational Studies, where adult education and HRD is placed at the University of Missouri-St. Louis, have resulted in the conclusion that no quality or rigor need be or is sacrificed as adult learning principles are practiced in the graduate courses. In fact, the adult learning theories are in concert with and supported by the school of education's official knowledge base statement which is required to be included in all course syllabi. The statement reads,"Teacher--A lifelong learner who creates learning settings where students are guided to construct meaning in concert with the teacher and other learners." Some results of long term impact evaluations (Henschke, 1990, p. 61) from past participants in the adult education/HRD graduate program indicate, but are not limited to, such gains as: New skill, new insights from hearing experts and other students, increased thinking ability, increased personal confidence, and greater satisfaction from the people they serve.

All of the elements included in the University of Missouri graduate adult education/HRD programs above, are also part of other credit and non-credit programs conducted by this author in the preparing of HRD professionals in other contexts with some special additions and adaptations for each situation.

A credit course on Foundations of Adult Basic Education was offered on video satellite nationally over a two and one-half month time period in 1990 with thirty-nine enrolling from eight states. An interactive element was added by interspersing four-one hour audio telephone conferences for participants to discuss various learnings and applications of the course content in their own settings. Five percent of the telephone time was occupied by the professor asking questions of the participants regarding how they were applying the course in their work contexts as educators of adults. This five percent generated response and interaction among them as well as interchange of ideas to their benefit professionally, which occupied twenty-four percent of the telephone time. (Lane 1990, pp. 89-93).

Seminars and conference sessions focusing on adult learning have been provided for both full and part time HRD professionals. These have been of various lengths: From forty-five minutes up to four hours. They have been implemented with HRD practitioners, HRD professionals, adult basic educators, nurse educators, educational developers in church international ministries, church educational leaders in eight countries on three continents, and conferees at state, regional, national and international conferences. Without exception, the sessions designed and conducted to include both adult learning theory and practice of the theory, received positive feedback from participants on giving attention to both aspects (Henschke, 1992a&b, All pages). The times I have failed to take into account all aspects of a presentation for learning or overlooked something which made the practice incongruent with the theory drew negative feedback underscoring importance of the theory and practice connection.

An advanced graduate credit course on Methods and Techniques for Teaching Adults was conducted in 1991 with HRD professionals and professional adult educators on a telephone network with sixty-five people at twenty-two locations in one state. The interactive element was assured (no interaction on a teleconference equals grinding learning to a halt!) with twelve groups forming to make presentations which required each group to involve the full class actively (not passively) in the presentation/learning experience. Incidentally, they "pulled it off."

A graduate credit course on Teaching Adults in University Extension was provided by the HRD professional in 1991 & 1992 to University Extension personnel in two states in two different formats: A four-weekend, consecutively on Friday nights and all day Saturdays; and, four consecutive days in one week and three consecutive days two months later. Each format worked equally well and the subject matter was applicable in both contexts.

A credit course was offered, by a team of this and another HRD professional, within a prison on preparing adult literacy tutors who are prison residents to function as tutors with other inmates. The twenty-four participants effectively took active responsibility for their own learning and had no difficulty in supporting each other in the process (Henschke & Perry, 1989, pp. 89-95).

Two different non-credit forty-hour inservice education courses on Methods and Techniques for Teaching Adults were conducted by this HRD professional with HRD professionals at the Federal University in Brazil: Forty participants in 1985, and twenty participants in 1991. Each group also participated in the design of their course (Henschke, 1987b, pp. 414-422). Their perceptions at the beginning of its not being in touch with their reality, changed to their feeling at the conclusion that each course was very relevant to them and their real world.

It is interesting to note that in a conference where the theme on theory and practice in training and professional development in adult and continuing education was presented, the structure of the paper presentation sessions supported theory and practice congruence. Instructions given to paper presenters by the conference organizers included: you have ninety minutes for your session; don't read the full text of your paper to your session participants; take five to ten minutes at most to present a capsule of what your paper says; then, let discussion occupy the remaining time. This author wondered if that would work when he presented his paper. For his own session as well as sessions of other author/presenters he attended, much to his delight the full time was occupied by productive interaction. Even more time for each session could have been beneficial. It certainly exemplified the notion that adults value active participation in their learning experiences.

A Missouri state certification regulation requires that emergency medical technicians (EMT) who aspire to become certified EMT instructors, must have, among other things, a forty clock hour course in instructing adults. A St. Louis medical facility asked this author to develop and teach such a course. The major components of the course in making this a live laboratory for learning include: How adults learn, designing learning experiences, methods and techniques for teaching adults, applying the above elements and designing a two-hour EMT subject matter block of learning, teaching a fifteen minute segment of the above designed program, and critique each others learning designs and teaching task. This is an application of making theory and practice congruent. In 1994, two of these courses were conducted with nineteen people. The experience helped them "catch" what helping others learn was all about.

Building coalitions with others on the University of Missouri-St. Louis campus has been very fruitful. It has yielded strength and growth to the program. Enrollment in courses has numbered over 2,200 from Fall 1983 through December, 1994. Sixteen doctoral students have been graduated. There are presently twenty-five doctoral students actively working on their programs. Eighty masters degree students are working on their programs, with one hundred twenty-five having been graduated. Five undergraduates are in the program with five having been graduated. This author has a 50% appointment for professing in HRD and Adult Education. He has researched and published enough to be initially appointed to the university doctoral faculty in 1990, and enough to probably be reappointed in 1996. He has been major advisor to all the doctoral and masters HRD/Adult Education students. He has chaired four of the doctoral dissertation and has been a member of the other twelve doctoral dissertation committees. Working with at least three other professors on each of sixteen HRD/Adult Education dissertations built in those professors an understanding of HRD/Adult Education. It also built some interest and investment on their part and a cooperative spirit into helping this program area succeed.

Cooperative conference presentations and joint publication of papers with Professor Dr. Henry Weinstock in the Department of Educational Studies at University of Missouri-St. Louis has also built understanding and support to this new field of study

Eleven of the doctoral graduates now teach in eight different higher institutions in three countries. One of them teaches in the Educational Studies Department in Foundations and Administration. Support for HRD/Adult Education has now reached the point of proposing a special doctoral emphasis area in Adult and Higher Education with sub-specializations in Human Resources Development, Community Education, and Vocational Business Education.

Conclusions and Summary

Results indicate the hypotheses of this study were accepted and a strong support was indicated for theory and practice congruence in university and college academic programs preparing human resource development practitioners. This paper also provided clarification of the terms theory, practice, learning, learning organization, and academic program relating to education. It has also addressed the issue of theory and practice connection regarding the academic program of preparing HRD professionals, traced some historical background of this issue which some think will not be resolved, and, provided a case illustration of how one HRD professional prepared in an academic program not only supportive of the theory and practice connection, but also advocated congruence between the two. In addition, the case illustration described how that HRD professional worked on the theory and practice issue in his professional context as he has continued to learn as well as facilitate the preparation of other HRD professionals. It highlights the theory and practice congruence insisted on, in the structure of the paper sessions, by conference organizers where the theme was on university preparation of educators of adults. The varieties of academic linkages were also described which helped advance the HRD program at University of Missouri-St. Louis.

It is important, however, to note that these results are not conclusive since much, although not all, of the case data were drawn from one academic program. Nevertheless, elements in this one program which has helped it grow exponentially could provide some important clues that may be considered and tested by other college and university programs desiring to develop a strong foundation and growth pattern for their HRD professional preparation program.

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Responding to Business Needs: Strategies to Facilitate Group Learning to Organizations

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Organizations are increasingly using teams to accomplish many of their goals. Businesses are asking for graduates who can work effectively in these teams as members and as leaders. HRD programs need to examine their curriculum to determine if they are fostering the transfer of group membership and facilitation skills from the classroom to the work environment. This paper discusses the use of teams in organizations and how graduate programs can respond to these organizations' needs.

In the United States, many adults are participating in human resource development (HRD) graduate education programs to prepare for leadership positions in business. These businesses are making dramatic changes in how they operate and require leaders with different perspectives and skills. According to Foggin (1992), academic programs are not in touch with their customers--their students and the companies that hire them. Educational programs in business have been criticized for emphasizing theory over practice (Raelin, 1993). Most employers do not expect people to sit in rows and compete with colleagues without interacting with them. The heart of most jobs is teamwork (Johnson, Johnson, & Smith, 1991) and businesses want employees with "people skills," who can be effective team members and team leaders (Jenkins, 1992).

Senge (1990) in his book, The Fifth Discipline, looks at businesses as learning organizations, where learning is valued as the best, and perhaps the only, source of competitive advantage. Senge supports the importance of teams in the workplace, stating that mastering team learning is vital to creating the learning organization because "teams, not individuals, are the fundamental learning unit in modern organizations. This is where the 'rubber meets the road'; unless the team can learn, the organization cannot learn" (p. 10). Business enterprises are experiencing fundamental changes as a result of an increasingly competitive environment. If there is to be a meaningful change in American business education, nothing less than a fundamental shift in the thinking of leading US business educators and managers needs to take place (Muller, Porter, & Rehder, 1991). Businesses want leaders who can deliver value to the customer by managing systems and processes cross-functionally and by working with other people in other divisions (Doyle, 1992). Businesses want people with "people skills," who can be effective team members and team leaders (Jenkins, 1992; Southerst, 1993). A 1994 Training magazine study survey indicated that 73% of organizations report using teams for some work processes (Filipczak, 1994).

Regardless of the number of work teams existing in organizations, it appears that the increase in using teams in all types of private and public sector organizations is not a fad to be dismissed, nor is it a new concept. This need for new ways of approaching work design and structure has been magnified by organizations requiring more adaptability, innovation, initiative and collaboration on the part of their employees to effectively meet the challenges of a different type of United States and world workforce, global competition, technological innovations, decreases in productivity, and shifting work values. In 1983 Rosabeth Moss Kanter's book The Changemasters theorized that the 1990's and beyond could not be addressed using the same type of work systems in existence in the 1890's. A rash of new books on "reengineering organizations," creating "learning organizations and systems" and "customer-driven processes" imply that in the United States, at least, a revolution in how companies address their employees, their customers,

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and their missions is rapidly occurring (Albrecht & Zemke, 1985; Blanchard, 1993; Hammer & Champy, 1993; Naisbitt, 1982; Peters, 1992; and Wheatley, 1992).

Using Teams in Organizations

One of the ways organizations have been addressing these challenges is through the use of groups of employees working together, either temporarily or permanently, to solve problems, design work processes, strategize for the future, etc. These work teams' responsibilities, goals, and structure vary among organizations, but they normally are built upon similar assumptions (Harper & Harper, 1992):

--They can react quickly to change;
--They can deliver higher quality and better customer service;
--They can constantly improve everything;
--They can improve the motivation, satisfaction and productivity of workers;
--They can constantly learn, self-correct, and respond to opportunities; and
--They utilize participant expertise.

In order for teams to work effectively, there are a number of pre-conditions including organizational and management support, evaluation systems aligned with work team effectiveness, participative culture, union support (if appropriate), long-term orientation, trust, and competence (Berrey, Klausner & Russ-Eft, 1993; Fisher, 1993; Harper & Harper, 1991; Holpp, 1992; Hughes, 1991; Wellins, 1992; and Wellins, Byham & Wilson, 1991).

Common across all articles and research of team effectiveness is, however, the necessity for training teams in a variety of skills, including: learning to cope with change, accepting responsibility for group's work, group dynamics, critical thinking, self-direction (Glaser, 1991); problem-solving, communication, meeting, influence, interviewing and presentation skills, conflict management, quality tools, roles and responsibilities, work flow analysis, and budgeting (Wellins et al., 1991); teamwork, valuing differences, communication, conflict, meeting and feedback skills (Ross, Fugaban, Powell & Wilson, 1994); job skills, team/interaction skills, and quality/action skills (Wellins, 1992); project management, negotiation and cross-skills (American Society for Training & Development, 1990); understanding adult learning (Sisco, 1993); and strong leadership and facilitative skills for those work teams with designated leaders or facilitators (Bradley, 1993).

There are, however, still questions about whether work teams add to an organization's competitiveness, quality and internal morale and productivity. Empirical studies of participative management and team processes, of which there are not many, tend to not be strictly controlled or able to be generalized (Cummings, Molloy & Glen, 1977; Kahnweiler, 1991;). Pearce and Ravlin, however, in 1987 summarized twenty-four studies from 1970-1986 which indicate increased employee satisfaction (Aquilano, 1977; Trist, Susman & Brown, 1977), reduced production costs (Aquilano, 1977; Trist et al., 1977; Walton, 1977), and decreased absenteeism, turnover, and accident rates (Trist et al., 1977; Walton, 1977). A number of non-empirical surveys and case studies have recently been produced which indicate a growing awareness and perhaps acceptance of the benefits of teamwork (Berrey et al., 1993; Ross et al., 1994; Sherriton & Stern, 1994; VanFleet & Zarichansky, 1994; and Zasloff & Gottsacker, 1994).

Educating Students to be Team Members

If teamwork in organizations is currently in place and unlikely to decrease in magnitude in the coming years, can we as educators increase the likelihood that our graduates will be able to successfully function as team members, or when appropriate act as facilitators and initiators of team processes? According to reports from businesses trying to influence schools to add team processes and skills to their curriculum, graduates are lacking in the necessary abilities when entering the workplace (Froiland, 1993).

According to Katz (as cited in Doyle, 1992), 74% of the companies that responded to a survey said that the ability to effectively work with others is the most important skill a Master of

Business Administration (MBA) graduate can possess. This is a departure from the past where quantitative and analytical skills were considered paramount. Several business schools have responded to these issues. The University of Tennessee has made fundamental changes in their MBA curriculum. They have put students together on teams to do all their work and provide formal training on how to work in teams. These teams work together, teach each other, and are evaluated as a unit (Foggin, 1992). Better known European schools such as the Swiss International Institute for Management Development and the British University of Leeds have a strong international focus, and now include, among other things, group process skills. Northwestern University's Kellogg School of Management has students create mini-corporations in which they practice functions such as group management, peer review and team recruitment (Doyle, 1992). The University of Chicago has made changes in its MBA program, and now includes Outward Bound (outdoor adventure training) activities, workshops on teamwork, and projects exploring group dynamics and team problem-solving. University of Pennsylvania's Wharton School conducts a two-semester course called Leadership Skills, which centers around group activities, with classes divided into six-person learning teams. Students work on team projects where they learn how to give and receive feedback, evaluate each other, and work on improving relationships. As in the Chicago program, the students keep journals of insights gleaned from the course (Doyle, 1992).

These are a few examples of business schools that have modified their programs in response to the business needs. This is the challenge for graduate education--to develop innovative programs for a population of adult, non-traditional students with competing demands on their time and money, students who are looking for practical experiences to help them acquire the skills needed to keep businesses competitive, as well as increase their own opportunities for career advancement.

HRD Graduate Education. Besides business schools, graduate academic programs in HRD also prepare team members and change agents for current and future business challenges. In order to prepare HRD professionals who are better equipped to respond to these previously discussed business needs for interpersonal, team and group skills, as well as to the needs of a population with little time and patience for "non-relevant" education, an executive weekend format for a Master's of Education degree in HRD was implemented in 1992 at Xavier University in Cincinnati, Ohio, USA, a private Jesuit institution. Drawing upon and adapting the American Society for Training & Development's (ASTD) Models for HRD Practice (McLagan, 1989) competencies in its framework, the program has integrated several unique elements to develop ethical HRD professionals:

(1) A cohort group of 40 working adults who remain together in "lock-step" fashion over 21 months; they take only prescribed courses with the same students and are not allowed electives or transferring in of credits to the program.

(2) A coordinated 11-course curriculum whose elements build upon each other and overlap in terms of reinforcing previously learned skills through shared assignments and group activities.

(3) The theme of a "classroom laboratory", allowing learning groups to experience and process learning objectives on an on-going basis.

(4) The emphasis on "community" growth and development which requires a non-traditional approach to facilitation and program administration.

(5) The use of learning journals as a tool to evaluate achievement of programmatic objectives, as well as necessity for curriculum change and classroom/group interventions.

This Master of Education degree program's intensive weekend format meets the needs of many busy, working professionals and allows for issues and skills to be explored in depth, with time for development, practice, feedback, reflection, and reinforcement. The cohort feature allows for the development of a community of learners who work together toward a common academic goal to accomplish personal and professional goals.

A major focus in the program is the use of learning groups to develop the skills needed to effectively work in and manage teams in organizations. Ongoing learning groups of approximately 6-8 students provide for continuous improvement, where groups reflect, evaluate, make future plans, and change. When people work together over an extended period of time, the group also serves as a personal support system for life's challenges: health problems, pregnancies, birth, divorce, job loss, and other crises that occur in everyday life. On the other hand, the groups provide a place to celebrate life with people who know and care about each other. Because of the interdependence on each other for learning, group members must be able to deal effectively with conflict. Otherwise, their progress and growth will be derailed and they will not be able to effectively utilize the unique talents of the individual group members to achieve their objectives. These learning groups receive a group grade for three of their assignments the first year: a group oral presentation, paper on an HRD topic, and detailed analysis of their group's growth and development. The groups therefore serve many purposes: they help students learn about (1) group development and functioning in a theoretical sense; (2) their own and others' behavior in groups and how the learnings can be generalized to work teams in an organization; (3) their own team and facilitator skills in a group; and (4) how to work together in teams to prepare oral and written presentations for their organizations. It also provides them with a natural support system for a very heavy workload their first year of the program. In order to continue to model a program value which emphasizes using people as "resources" both on- and off-the-job, options are available throughout the program which allow people to work with partners or in teams to complete projects and assignments.

Comparing Organizational Work Teams and Academic Learning Groups

There are constraints in time, personnel, environment and goals that inhibit a true simulation of workplace activities in the classroom. The following table examines and compares self-directed work teams in organizations with the project/learning groups of Xavier's HRD program. This comparison illustrates how closely the classroom environment is or is not able to parallel the work setting.

	Characteristics of Successful Self-Directed WorkTeams	*Characteristics of XU HRD Project/Learning Groups*
Definitions	A group of employees (usually 5-15) responsible for a whole product or process. The team plans and performs the work, managing many of the things supervisors or management used to do.	A group of 5-8 graduate students assigned to work together outside of class over a year's time to prepare a group oral presentation, written report, and group analysis paper. Members receive group grades and are not assigned designated roles.
Expectations	Management can vary the extent of responsibility, scope of work, or authority given to the team depending upon the skills, nature of the problem/process or maturity of the team. Creativity and risk-taking are encouraged.	Members are given general parameters for their group presentation in terms of time, classroom resources, choice of HRD topic and structure and formal of their presentation. They are also required to involve every member in the planning, production, presentation and writing phases of the project. Groups are expected to handle internal conflict issues without intervention from faculty. Creativity and risk-taking is encouraged in their presentation as well as modeled by faculty.

	Characteristics of Successful Self-Directed WorkTeams	*Characteristics of XU HRD Project/Learning Groups*
Goals	A shared goal/mission that everyone agrees on and is committed to accomplishing. Common agreement on high expectations for the team. Shared values that support the team.	Members have to agree upon a project that they are all willing to work together to accomplish. Given the nature of group dynamics, the project goals may evolve as the team evolves and becomes more aware and comfortable with each others' strengths, weaknesses and interests. Although in some undergraduate classes students' expectations may vary (i.e. "I'll be satisfied with a "B"), the adult students all seem to have extremely high and similar expectations for their own and others' behavior and contributions.
Climate	A climate of trust. Open, honest communication. Issues confronted in a timely manner. A win-win approach to conflict management. A sense of belonging and caring for team members. Listening to each other and sensitivity to each others' needs. Diversity valued as an asset.	When people work together over an extended period of time, the group also serves as a personal support system for life's challenges. Because of the interdependence on each other for learning, groups members must be able to deal effectively with conflict. In-class exercises and resources are made available to team members to address issues of conflict and communication. Feedback exercises are conducted and modeled by faculty in all concurrent courses to encourage team openness and risk-taking. Members are assigned to groups based upon diversity of work experiences; assessment instruments which help members to examine their similarities and differences also are used to encourage teams to value and utilize these strengths in planning and conducting their work.
Participation	Members who are interdependent and know they need each other to accomplish team goals. Members assume responsibility for work that must be done. A "can do" attitude grows out of commitment, involvement, and having a say. All team members participate; contributions are acknowledged; consensus is sought. A general feeling that one can influence what happens.	The nature of the projects requires that all members be involved in the planning, presentation and analysis phases of their projects. The teams have a substantial amount of "freedom" in selecting their topic and designing their presentation. A sense of team "pride" develops. The lengths and amount of time that is devoted to the projects increases the commitment and involvement levels of members. Only groups grades are given for the presentation and reports.

	Characteristics of Successful Self-Directed WorkTeams	*Characteristics of XU HRD Project/Learning Groups*
Roles	Participative leadership. The team decides which member will do a task; some assign rotating tasks. Leadership is shared, not performed by a supervisor; if there is a designated team leader, the leader is more of a facilitator supporting the group as coach and trainer rather than the traditional "boss."	There is no designated leader for the groups. In-class exercises which explore primary styles of team member behaviors and roles are conducted which allow members to examine alternative ways to behave in a group. Rotating roles are encouraged to allow members to develop additional styles of leading, facilitating and participating in a group.
Processes	Ability to self-correct and measure progress. Meet regularly to solve problems. Develop procedures to: diagnose, analyze, and solve complex problems; review workloads; give work assignments and review performance.	The groups are encouraged to step back and evaluate their ways of problem-solving and decision-making. Concurrent with the first semester's group projects, the course on consulting is conducted which also provides concrete skills in this area. Training in meeting management, developing group norms and behavioral expectations, and techniques of process consultation is conducted for students to apply to their project group, as well as their work environment.
Improvement	The team if constantly encouraged to increase skills, improve the product or service, and solve problems. A focus on process as well as results. They are accountable for elements of a work process/problem/product, and need information and feedback that is traditionally reserved for management. Team gets prompt, reliable, useful feedback about the results of its performance. The team knows the rewards for success.	Groups are continually being encouraged to use outside resources, as well as in-class exercises, to evaluate their group progress and process. Consultation is available from faculty, but for feedback purposes only, not for solving the group's perceived problems. As part of the group project, each group is required to submit a final group analysis paper which examines their group's progress and process through the year. There is also an extensive feedback process that takes place at the completion of each group's presentation which focuses on its content and group presentation style.

	Characteristics of Successful Self-Directed WorkTeams	*Characteristics of XU HRD Project Learning Groups*
Competencies	Team members are competent. They possess a variety of technical skills. They have (with the help of training) interpersonal skills that teamwork requires (communication, feedback, problem-solving, decision-making, etc.)	Team members are assigned to groups based upon diversity of work experience in order to more directly simulate the work environment. There is a wide difference among students' experiences in planning and presenting be fore groups, as well as in the HRD content areas; these differences, although more striking in the beginning of the year, even out dramatically about 1/3 into their group experience. In-class exercises and assessment of interpersonal skills, feedback, communication, etc. are designed to increase team members' abilities in these areas and also to encourage dialogue between members on group competencies.

Integrating Theory and Practice

In order to "close the loop" on the group projects and to help students apply their learnings to work environments, there are three important assignments. Each learning group must prepare a written group analysis, which is a detailed reflection and examination of the group's growth and development over the school year. This paper receives a group grade.

Two individual assignments are also required. One is an individual analysis, where each student reflects on their own behavior in their learning group and the learning that has resulted. The second individual assignment is a year-long learning journal, which helps to integrate all facets of the curriculum and once again encourage reflection. A journal that is not a diary of events but a documentation of how one thinks and learns from experience can be a powerful learning tool. Putting thoughts in writing also lets individuals express their feelings and learn how those emotions can be redirected to help reach more effective learning and a complete life. By re-reading the journal, students are able to see their progress or their lack of progress, which may lead them to change their process or re-evaluate their goals.

Writing a learning journal allows students to better understand themselves and their learning processes, provides a broader view of learning, and helps them to see the connectedness between many seemingly diverse learning opportunities throughout life. Grading for these journals is based upon the students actively working through the process of experience, reflection and action.

Journal writing is widely cited as a mechanism for facilitating reflection and learning (Kottkamp, 1990; McAlpine, 1993; Meyers & Jones, 1992). McAlpine (1993) discusses journal writing as a learning tool that links theory and practice. Through the description of the experience and the expression of thoughts and feelings, the writer gains an explicit understanding of what has been learned.

Reflection is a primary component of all of these three assignments. Schon (1983) developed the concept of reflective practice, which involves thinking about and critically analyzing one's actions with the goal of improving one's professional practice. Schon's work has a historical foundation in the learning models of Dewey, Lewin, and Piaget, each of whom espoused that learning involves the integration of experience with reflection as well as the integration of theory with practice. Although each contended that experience is the basis for learning, they also maintained that learning cannot take place without reflection.

The practice of critical self-reflection and the willingness to question and scrutinize current ways of doing and thinking are closely related to team and organizational effectiveness. Organizational studies in a variety of contexts conclude that the most innovative and productive organizations encourage employees to scrutinize organizational behavior, to challenge existing practices, and to continually look for better ways of doing things (Brookfield, 1987). These ideas are also congruent with Senge's discipline of team and organizational learning (1990).

These three assignments are designed to foster an environment which encourages reflection as a way of life--throughout the students' lives. They are also the means by which the curriculum comes "alive" and helps students link what they are learning "in theory" with what they actually do on the job. By reflecting in their journals and group and individual analyses on how their learning groups progressed throughout the year, the students are able to more concretely understand the group development theories they studied in class. They are also able to extrapolate from this experience and learn how work teams in organizations may progress, or be deterred, in working toward their goals. By reflecting on their own behavior in the learning groups, they are better able to understand the leadership theories they have also studied, as well as help them to apply these theories in facilitating and leading work teams in their organizations. Using the journal as a way to better understand their own learning process also helps the students apply adult learning theories to designing HRD curriculum and programs. Throughout the program, other activities are conducted and self-assessment instruments administered which help students reflect on their own interpersonal and group skills. Encouraging and facilitating reflection in learning groups has allowed students to take responsibility for applying what they learn in the classroom to their learning groups and ultimately to their on-the-job behavior. Whereas the journal assignment allows students to track their learning process over time, writing the group analysis paper helps the students reach closure at the end of their year-long experience. Using these tools for reflection can be facilitated more easily with groups that have a longer lifespan, although the types of issues and learning will occur as well in a semester-long course. The dynamics present in a group that knows each of the members will have to continue in the same classes together for a year after their group experience is complete may be very different than a traditional program; motivation, dedication, and commitment to the group process and nature of the assignments may be heightened by the cohort program.

Summary

There are many similarities between self-directed work teams in organizations and Xavier University's project/learning groups. Whereas the experience of participating in the groups and completing the assignments provides a strong base for the students, there are additional elements in the curriculum to supplement the project team experiences. These include: discussions about the character of organizations; pros and cons of different types of organizational structures; and background on the history, purpose and process of implementing self-directed work teams in organizations. This helps round out the learning so that the program meets its objectives of helping students function effectively in self-directed work teams, as well as understand how they as HRD professionals could create an environment where self-directed work teams could work in an organization.

Can this type of curriculum model be transplanted to another educational institution? The assumptions inherent in a curriculum which allows for a holistic approach to education, which is not dependent upon a philosophy of rote learning or testing, which values reflection and practice outside of a traditional grading system, are not necessarily present in other programs. However, if as futurists project, one of the major skills to be developed among adults and upcoming workforces is their ability to be self-directed in their learning, a curriculum initiative which rewards creativity, initiative, personal examination and learning needs to be explored. Academic programs which produce graduates who have not been encouraged to create and theorize innovations, which have only rewarded mechanical memorization and regurgitation of facts, will find these students unable to adapt to and lead change in their organizations.

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Evaluation and Evolution of a HRD Program

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Enrollment in the master of science degree in human resource development increased rapidly during the last three years. Class size and the number of advisees per faculty member also increased. Graduate students under the advisement of faculty members completed several research studies involving students and graduates to determine if the program was meeting its goals and the needs of the participants. Most participants were satisfied. Their suggestions on program improvements are emphasized in this paper.

The master of science degree in human resource development was established at Pittsburg State University(PSU) in 1989. Major course requirements were identified through a review of HRD master degree programs at other universities, a survey of Kansas City ASTD members, and with the assistance of an advisory committee of business and industry HRD practitioners in the Wichita, Kansas area.

Emphasis of the degree program was planned for PSU extension locations in Kansas City, Topeka, and Wichita, and the core courses were implemented into the staff rotation schedule for these locations. A limited number of HRD courses were scheduled at the PSU campus.

Enrollments in HRD classes and the master degree program were small from 1989 through 1991. However, beginning in 1992 on-campus enrollments and degree participants increased rapidly. Additional campus courses had to be scheduled, and during the 1994 Spring and Fall semester several courses had to be divided into two sections. Some classes still had over 50 students. Degree candidates are now at the level where serious consideration must be given to adding professional staff members to the department. Before adding new staff, the department must have a clear idea of future program and course needs in order to support the request, and to select the appropriate individual. The number of graduates, obtained from the PSU Registrar, during this time is shown in Table I.

Table 1. Number of HRD Graduates

Year	Number of Graduates
1990	3
1991	9
1992	11
1993	41
Total	64

Evaluation is an essential component in the development of any new instructional program. Because of the heavy work load in developing courses for the new HRD program, the staff members assigned to this master degree had limited time to evaluate the effectiveness of the HRD program and of individual courses. To help solve this problem, several graduate students, working with their advisor, completed research projects related to various aspects of this program.

Statement of the Problem

The Technical Education Department received comments from program and class enrollees and graduates, both positive and negative, about the master degree in human resource development. Several student research projects have been conducted related to the program. However, there has not been an effort to consolidate these studies in order to provide a comprehensive evaluation of the degree and so there is no clear picture of possible changes that may be needed to make the degree more effective.

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Research Questions

In order to systematically study and analyze results from the various research projects completed related to the master of science degree in human resource development, the following research questions were developed: (1) How satisfied are graduates with the program and with courses within the program? (2) What types of jobs have graduates of the program been able to obtain? (3) Are there specific needs of international students enrolled in the program? (4) How, if in any way, does the program need to be changed? and (5) How, if in any way, should courses within the program be changed?

Methodology

The following methodology was developed to answer the research questions: (1) Research projects completed by HRD master degree students were reviewed to identify those that were related to this study. This review was necessary because four individuals advise students in this program. Projects being conducted during the 1994 Fall semester were included. (2) Chapter II, Review of Literature, for each research project was analyzed to identify similar and related research that could help answer the research questions for this study. (3) The findings of each study was reviewed to identify that data and conclusions important and related to the research questions for this study. (4) Data and conclusions identified as related to this study's research questions were analyzed and compared to develop a summary and formulate recommendations for the improvement of the master of science degree in HRD.

The primary method of gathering data by the researchers were questionnaires administered through the mail. Two different populations were surveyed. Individuals in HRD related positions were surveyed to determine the competencies sought in graduates of HRD degree programs or from individuals seeking employment in HRD positions. The other source of data were participants in the degree program, both current students and graduates. Two problems encountered were the rate of return from the survey instrument, and difficulty in contacting graduates since many of the international students returned to their country following the completion of their degree program.

Key Findings

Information provided in Chapter IV, Findings or Results, of each research study was reviewed. Findings are presented under several headings.

Work Experience and Internships. Lin (1994) surveyed managers and directors of HRD in the Kansas City area as to requirements for employment in their departments. The greatest number of respondents, 16 of 32 represented organizations with over 750 employees. Only three required a masters degree, but 13 preferred that applicants have this degree. Twenty-seven, 93 percent, required applicants to have HRD work experience with the years required ranging from less than 1 to 5 and above. Sixteen, or 62 percent, would accept teaching experience in place of HRD experience.

Seventy-one percent of respondents indicated that an HRD related internship would be very valuable for someone without previous HRD work experience. Over half, 54 percent, would not consider an applicant who did not have work experience in some business areas related to the operations of their organization.

Halim (1993) in a survey of 50 students enrolled in HRD summer school courses at PSU found that less than 20 percent has previously worked in the HRD field. However, 66.7 percent had worked in occupations outside of HRD. More that half, 56.7 percent, of respondents agreed that PSU should establish a "practical training center" where students could get additional experience and build competence in those skills introduced in courses and important for HRD employment.

Zarin (1994) found that only 26.9 percent of students who responded to his survey were practitioners before they entered the degree program, 40.8 percent were in jobs not related to HRD, and 30.8 percent were students. Half of his respondents were American while the other half were International students.

Employment of Graduates. Zarin's (1994) data gathered in January 1994 included students who graduated in the Spring, Summer, and Fall of 1993, as well as those who would graduate at the end of the 1994 Spring semester. The students status at the time of this survey is shown in Table 2.

Table 2. Status of Participants

Status	Frequency	Percent
Final semester	12	23.1
Graduated and have attempted to obtain job	21	40.4
Graduated and have a permanent job	15	28.8
Self employed	3	5.8
Pursuing further study	1	1.9

n = 52

Data from Table 1 must be considered in analyzing data in Table 2. The greatest number of HRD graduates occurred in 1993 which would help explain why the largest number of graduates were not employed.

Lin's (1994) data was gathered in June 1994 and included students who had graduated from 1990 through December 1993. The employment status of the 52 out of 64 graduates who responded is shown in Table 3. Of these respondents, 19 had been employed in their present job for less than 6 months and 10 more between 6 months and one year.

Table 3. Employment of HRD Graduates

Status	Frequency	Percent
Employed	45	88
Not employed	5	10
Did not answer	1	2

n = 51

Two of the respondents who were not employed were pursuing additional education, and one reported that they had family responsibilities that prevented them from working. Respondents were also asked the relationship between their present job and the HRD program. Responses are shown in Table 4.

Table 4. Relationship Between Degree and Job

Relationship	Frequency	Percent
Identical	5	10
Closely related	17	33
Somewhat related	18	35
Not related	4	8
No response	7	14

n = 51

Graduates were also asked about the effect their degree on job advancement. Over 90 percent responded that they felt their degree would help them advance in their career. The employment level was also requested by Lin. Results shown in Table 5 indicate the largest employment in experienced professional and mid-management level positions.

Table 5. Employment Level

Level	Frequency	Percent
Beginning professional	13	25
Experienced professional/mid-management	22	43
Upper management	8	16
No response	8	16

n = 51

Course Changes. Halim (1993) found that a majority of respondents, 54 percent, perceived HRD courses as providing for the practical application of theoretical knowledge. However, 60 percent felt that the courses were more theoretical that practical. HRD courses for which respondents felt they needed the most additional practical experience were TED 899 Planning and Implementing a HRD Program, TED 707 Instructional Methods in TED, and TED 885 Instructional System Design.

Zarin (1994) asked HRD students and graduates to rank the importance of the five core HRD degree courses. The percent of times that a course was listed as first or second out of its total rankings and the average ranking are given in Table 6.

Table 6. Perceptions Related to the Importance of Core Courses

Course	% 1st or 2nd	Mean
Instructional methods in TED	40.4	2.69
Instructional system design	50.0	2.82
Supervisory techniques and procedures	46.1	2.68
History & philosophy of HRD	32.7	2.88
Planning & implementing a HRD program	59.6	2.19

n = 52

Chien-Liang Lin asked the HRD graduates to rate the TED department courses they completed as to their value related to the individual's present position. The mean value rating for each course was also determined as shown in Table 7.

Table 7. Perceived Value of Courses

Course	1	2	3	4	5	Mean
Instructional methods in TED	0	3	5	20	18	4.15
Instructional system design	3	0	2	13	26	4.11
Supervisory techniques and procedures	2	3	7	18	15	3.91
History & philosophy of HRD	9	6	4	16	12	3.34
Planning/Implem. a HRD program	5	2	4	20	15	3.83
Occupational analysis	2	2	10	15	12	3.90
Personnel development in business	0	0	8	16	9	4.03
HRD strategies for quality improvement	0	1	5	11	9	4.08
Methods of research	1	4	8	18	17	3.96
Performance evaluation	0	1	7	13	15	3.94

1 = no value, 2 = little value, 3 = undecided, 4 = some value, 5 = much value

n = 26 - 48

All courses were perceived as being of value related to the individuals present job. Personnel development was the only course with no ratings of " no or little value." Of the core courses, History and philosophy of HRD received the most negative ratings. Instructional system design received the most ratings of "much value."

Degree Improvements Suggested Both Zarin and Chien-Liang Lin asked respondents if they would pick the same degree program if they could start over again. In both surveys over 80 percent responded that they would as shown in Table 8. Other perceptions of the degree received over a 90 percent positive response.

Reasons given to Lin for why respondents would not choose the program again included: (1) standards are not high enough, (2) I would focus more on the business program, (3) I was unaware of other programs when I enrolled, (4) the HRD program is not specified enough, and (5) lower student's quality.

Reasons given to Lin for why respondents would choose the program again included: (1) opportunities still exist, (2) way program structured, (3) excellent instructors and course materials, (4) cost effective and flexible, and (5) caring environment.

Table 8. General HRD Degree Perception

Statement	Yes	No	Omitted
Zarin			
Do you think the M.S. in HRD courses have contributed positively to your personal development?	94.2	3.9	1.9
If you were starting over again would you consider HRD as your major at Pittsburg State University?	86.5	3.9	9.6
Lin			
Would you recommend the PSU HRD program to others?	95.8	4.2	0
If you could choose over again, would you still choose the HRD program at PSU?	84.3	15.7	0

Chien-Liang Lin asked respondents for suggestions on improving the program. Following are a consolidated listing of suggestions.

1. Include more on legal issues and traditional "personnel" subjects because many job advertisements include these.
2. Provide for more courses.
3. 33 credit hours are not enough for international students.
4. Include more contact with business and outside instructors from business.
5. Add real world curriculum and examples.
6. Communication skills are not adequately presented.
7. Add courses that help a person develop professionally.
8. Promote it more within the community.
9. Do more off-campus and other site programs.
10. Make the courses and program harder. The reputation is becoming a quick and easy way to a master's degree.

Zarin asked three questions related to student's competency development in the program. He related these to the cognitive, psychomotor, and affective domains as shown in Table 9. Students responded positively, over 85 percent to all three statements.

Table 9. Development of Learning Domains

Statement	% Agreement
M.S. degree has allowed me to acquire the knowledge I need	92.3
M.S. degree has allowed me to acquire the skills I need	86.6
M.S. degree has contributed to the development of my thinking abilities	92.3

***HRD and HRM*.** Cholavanich (1994) based her study on the relationship between HRD and HRM on the Human Resource Wheel presented in the *Models for Excellence* from the American Society for Training and Development. She surveyed 50 businesses within a 200 mile radius of Pittsburg to determine their perception of activities which should be performed by HRD, activities performed by HRM, and activities which should be shared. Responses to a selected number of items from her survey are shown in Table 10.

Table 10. HRD and HRM Activities

Areas	Responsibility			
	HRM	HRD	Shared	Not Done
Training of employees	12	88	0	0
Assisting employees in career development	0	78	22	0
Designing employees jobs and responsibilities	54	6	34	6
Planning for organization human resource needs	16	19	65	0
Counseling to individual employees	44	6	40	10
Planning employees' compensation and benefits	85	0	15	0
Assuring healthy union/organizational relationships	32	10	38	20
Implementing TQM	15	28	32	25

n = 32

Her findings show a somewhat blurred boundary between what has traditionally been considered as HRD or HRM responsibilities. This can particularly be seen for the items related to designing jobs, planning for hr needs, and union relations.

Sriherunrusmee (1994) found that it was important for HRD personnel to have a basic knowledge of labor law and employment. This knowledge was rated as critical or important in helping prevent discrimination in the selection, provision for equal opportunities, and promotion of employees. Although the HRD practitioner may not frequently be performing those activities, their counseling and training responsibilities will include individuals whose actions can result in lawsuits against the organization.

***International Students*.** Sinitwarakul (1994) studied five areas related to culture shock for International students. These were: (1) Eating habits, (2) Religion, (3) Clothing, (4) Social values, and (5) Language. Findings related to social values and language were perceived as having a relationship to this study. The following table includes the level of respondents agreement with items selected from the study.

Table 11. International Student Cultural Perceptions

Statement	SA	A	U	D	SD
I feel I am discriminated against in class.	6	16	20	28	30
I can understand nearly every-thing the instructor explained in class.	20	26	20	26	8
I have no problem in taking notes from the lecture.	22	24	24	22	8
Other people can understand clearly when I talk to them in English.	8	34	24	30	4
I feel comfortable if I have to work in a group that has nearly all Americans.	20	19	26	26	10

SA = Strongly Agreed, A = Agreed, U = Uncertain, D = Disagreed, and SD = Strongly Disagreed
numbers given are percentages of respondents

Implications

Work Experience and Internships. The findings of Su-Ling Lin (1994) reinforces the need for an internship for students in the degree program who have no HRD related work experience. This should be for both students who have immediately entered the graduate program following their bachelors degree, and older individuals who were employed in jobs not related to HRD. This is emphasized by the findings of Halim (1993) and Zarin (1994) that less than one-third of HRD students were HRD practitioners before they entered the degree program. Another problem is posed by those students who enter the program with no, or very little general work experience. This is more common for International students than for American students, since the majority of American students are part-time and may be working in a HRD related job. Finding HRD related internships for International students in a community as small as Pittsburg, is expected to be difficult, especially for those individuals with no work experience.

These findings have further implications related to recruitment and selection of degree participants as well as to the academic and career counseling of individuals in the degree. Individuals with limited work experience may need to locate part-time jobs during their study, or full-time non-HRD related employment following graduation in order to provide a practical work background that can serve as a basis for future HRD related employment. Area of interest or additional course work may be able to provide individuals a subject-matter basis for HRD activities. Individuals entering the program must realize the importance of work or organizational experience for employment in HRD positions. The HRD staff may want to consider if previous work experience should be a prerequisite for entry into the program based on additional study of the difficulty graduates without experience have in finding employment.

These findings may have different implications for the PSU extension degree program. The majority of those participants are already employed in a HRD related position. Practical HRD experience through an internship may not be as important. However, it should still be considered as an option since participants may want to change emphasis in their HRD career and an internship would provide experience in another HRD role. HRD courses presented at extension locations may need to include more theory and subject matter as participants can get experience through their jobs, rather than through extensive class-time projects.

Most HRD programs do not have sufficient graduate assistant positions available to provide all the help needed by their professional staff. The interest expressed by students in Halim's study for additional practical experience by campus students provides opportunities for the HRD staff in the development and conducting of HRD courses. Students in their final semesters of the program could be used to revise and update courses that they previously completed. They may be given portions of a course for their project in the Instructional System Design course. They may be enrolled in an internship and given responsibility for the revision of a course for a new text edition, or for the development of additional case studies or class learning activities. Graduate students may also obtain additional experience through assisting an instructor by presenting portions of a course, by helping students in a course with class projects and activities, or in teaching a seminar in an area of their expertise.

Employment of Graduates. Information provided by Zarin (1994) and Chien-Liang Lin (1994) indicates that HRD graduates are finding employment after they have finished their human resource development degree. An initial concern related to the large number in Zarin's study who were attempting to find a job is reduced when Lin's results of 88 percent employment are considered. This most likely can be explained by a large number of graduates who had just finished their degree when Zarin collected his data and then had time to obtain employment in the additional five months before Lin's study.

Concern must be expressed from the findings in Table 4 which shows that the greatest number of graduates were in jobs categorized as "somewhat related" to their degree, and the relatively low number employed in jobs "identical" to their degree. This may partially be explained by taking into account that many participants previous work experience was not in HRD, and these graduates are obtaining jobs related to previous work and have not yet moved into a HRD position.

These findings, when considering graduates opinions that their degree has helped them in their job, indicates that a HRD degree is of benefit to people in jobs and departments outside of HRD. Additional follow-up of graduates as they progress in their careers will be needed to see if a greater percentage obtain directly related positions, and the long-term value of the degree to participants.

Course Changes. Overall evaluation of courses in the masters degree was very positive. Respondents in Zarin's study felt that course were well organized, and that evaluation processes were fair and comprehensive. All the core courses were perceived as being important. Since TED 896 History and philosophy of HRD received the lowest ranking core course in Zarin's study and the lowest rating in Lin's study, it should be examined as to ways to make it more applicable.

Two of the courses that received the highest mean ratings in Lin's study, TED 706 Personnel development in business and TED 741 HRD strategies for implement quality improvement, are not degree requirements. Additional study may be needed to determine if these should be made degree requirements.

The HRD staff must consider the balance of theory to practical application for each course. Implications suggest that during course revisions additional HRD examples as well as class activities designed to build student competencies be added. As rapidly as jobs and business are changing, the department needs a process by which courses are added or dropped based on need.

Suggestions from both Zarin's and Lin's study support comments to Dr. Schwindt during personals interview with graduates in Malaysia and Thailand that many courses may not be rigerous enough and fail to challenge or motivate students to develop their full capabilities. The TED staff needs to study course requirements as well as consider the possiblity of "grade inflation."

Degree Improvements Suggested. Respondents to both Zarin's and Lin's surveys rated the M.S. in HRD degree very high and would recommend it to others. However, there were several individuals from both surveys who would choose a different degree, if they were to start over again.

The TED department must be careful that it does not become complacent because of the positive responses, as a number of suggestions were provided by respondents as to how the program could be improved. The TED department should follow-up on these suggestions with additional personal interviews with graduates in order to improve the program. Implications for the most improvement seemed to be related to making the program more rigorous, including more "real work" activities, and developing better contacts with the business community. Many implications related to degree improvements are included under other headings in this section of the report.

These findings have strong implications related to the staffing of the TED department. Comments suggested that staff "real life HRD experience" may be lacking. The department must address the problem of how to keep staff members current with what is going on in HRD in business and industry. Possible activities encouraging staff to get involved would include more participation in HRD professional organizations, consulting projects with business, and sabbaticals where staff would spend time working in business. Use of part-time faculty from business should also be considered.

HRD and HRM. Organizations survey by Cholavanich (1994) indicated that there is a strong need for the HRD and HRM departments to work together, and that activities typically considered as under one or the others domains should be performed cooperatively. Sriherunrusmee (1994) found that HRD specialist need a fundamental understanding of labor law and legal regulations that will affect their department and the organization they work for. From these studies, plus student comments on studies by Lin and others, HRD departments should consider including courses related to HRM in their HRD programs. This should be relatively easy for those departments where HRD is a part of the Business School. It raises problems for institutions such as PSU where the HRD department is outside of the Business School , and therefore, will have trouble with institutional approval for HRM courses. This implies that in these situations, the department offering the HRD degree must develop a closer relationship or cooperative degree with the Business School or College.

These findings also have implications for programs, such as at Pittsburg, where the graduates will most likely go into combination HRD/HRM positions because of the smaller size of businesses in their area and the low number of stand along HRD departments in these businesses. By providing HRM courses in the HRD curriculum, employment opportunities for graduates will be expanded, as well as internship possibilities increased.

International Students. Since a majority of campus degree participants are International students, their perceptions must be carefully considered. The majority, 58 percent felt that they were not being discriminated against in class. It is important to note that 24 percent did feel that they were discriminated against, and 20 percent were uncertain. Discrimination or perceived discrimination against International students could hurt future enrollments as well as success in the program.

Nearly half, 46 percent, felt that they could understand the instructor and had no problems in taking notes in class. A slightly lower number, 42 percent, felt that these were clearly understood. However, the HRD staff needs to concentrate on communications related to the International student since over one-third of respondents for each item indicated a problem by disagreeing with the statements.

Nearly as many students felt uuncomfortable 36 percent, as felt ccomfortable 39 percent in working with groups composed primarily of American students. This may indicate that more effort needs to be made in providing both International and American students opportunities to work with each other, especially with the growing importance on global HRD activities.

Conclusions

The following conclusions have been drawn based on the research studies cited in this report. Recommendations based on these conclusions are included.

Presentation Skill. Provide more intensive experience in presentation techniques. An additional course should be added and students given more chances to assist with class presentation in HRD or undergraduate courses.

Occupational and Needs Analysis. Expand instruction related to needs analysis and evaluation. Individual courses may be needed for each subject, or the Instructional System Design course be divided into two courses with the sections on analysis and evaluation expanded.

Practical Application. Include more practical application projects in courses to supplement the theory. Each lesson should have an application project, or a course project that covers several lessons is needed. In addition, a HRD instructor should be provided time for internships development.

Internships. Internships are critical for those students who lack work and HRD experience. Time needs to be provided for the Technical Education Staff to work with local businesses to develop and supervise student internships.

Human Resource Management. Courses on human resource management should be included in the program. Graduates are going into positions where HRD and HRM are combined; especially in smaller organizations. This will require a cooperative effort with the PSU School of Business.

Total Quality Management. All HRD graduates should be required to have at least one course, or a practical internship in total quality management. TQM courses are presently taught in the school of business and in the school of technology in addition to TED.

Prerequisites. Prerequisites for those students entering the master degree in HRD who do not have teaching, HRD, or business experience are needed. This would give students in courses a more consistent level of understanding, reducing confusion of some students and boredom of others.

Increase Requirements. The number of credits required for the degree may need to be expanded in order to provide graduates with the prerequisites for employment in HRD positions. Graduates are expected to be able to immediately become productive members of the HRD team. Other HRD graduate programs should be survey again to determine the most common length of masters programs.

Career Planing. Require that all individuals develop a career plan before they are admitted into candidacy status. By clarifying their goals, participants will be better able to select elective or area of interest courses and their course work can be better related to HRD jobs and/or roles. This career plan should be introduced in the first core course students take, TED 896 Planning and Implementing a HRD Program, and emphasized in additional courses throughout the degree.

Cross Cultural Experiences. International students need additional experience in communicating in the English language and in working with American students. Instructors must be careful that they are not biased, and should encourage greater interaction by having a mix of International and American students on class group activities. A diversity workshop could be developed by an instructor or advanced graduate student and presented as a summer seminar course.

Communications with International Students. Because of the large number of International students in the program, instructors must be careful that the terminology and examples used are clear to these students. Class activities such as case studies may need to be revised, or two versions may be needed. Instructors may need to watch their presentation speed. However, they must be careful that by slowing down and simplification, their presentations do not become boring to American students.

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Developing Systems Thinking Ability in Organizations

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With the myriad changes facing businesses today, a key growth factor may be workers' ability to think critically. This study focused on the development of a particular kind of critical thinking ability: "systems thinking." This research examined the relationship between cognitive complexity, locus of control, and selected mediating variables. The results from this research shows that several of the predictor variables correlate significantly with systems thinking. The results have implications for training and development practitioners.

Many organizations today are undergoing tremendous changes in their organizational structures. Going from a hierarchical structure to a more team-based structure signals a shift in decision-making responsibility to those throughout the organization. As Peter Senge (1992) states, "It is simply no longer possible to have 'one great systems thinker' at the top - a single individual who figures things out and then devises the mechanisms and structures to translate his insights into organizational action." Can systems thinking be fostered at different levels of the organization when, in the words of Stata (1992), "there are very few [in] companies that are truly 'systems thinkers'"? This is a question that intrigued me immensely. After observing several trainees give up in frustration diagramming a business problem via causal loops, I began to ask what went into developing this skill. First, however, there will be a definition of what comprises systems thinking.

Systems thinking is the art and science of making reliable inferences about behavior by developing an increasingly deep understanding of underlying structure (Richmond, 1994, p. 139). Systems thinking requires the person to organize and understand how actions reinforce, balance, or counterbalance each other. Understanding feedback is thought to be a building block for learning to recognize and understand consequences of actions. This kind of thinking requires individuals to look at the dynamic feedback within the system itself as being responsible for generating the behavior patterns exhibited by the system, rather than the exogenous factors we often identify as causes (Richmond, 1993). This shift in viewpoint would appear to coincide, at the level of the individual, with adoption of an internal locus of control or responsibility--at least, that was the primary assumption of this study.

The emphasis in this study was on the subject's understanding of feedback and its consequences in performing analytical tasks. More specifically, the focus was on whether individuals are able to make the shift in viewpoint from a belief in external causality to understanding the interrelationships in certain closed-loop dynamic processes. It also explored the role that mindset might play in the development of systems thinking skills. This had been brought to light by Professor Lynn Isabella (1994) at the University of Virginia who found that only ten percent of executives seem to have a mindset that searches for connections between seemingly unconnected variables. The executives with this mindset also received the highest job performance ratings of the entire group (Isabella, 1994, p. 11). Locus of control and the "mindset," operationalized in this study as cognitive complexity, served as the overriding conceptual frameworks for this research.

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Research Questions

This study attempted to answer the following questions: (1) Is there a relationship between stages of cognitive complexity and level of success on systems thinking tasks? (2) What is the relationship between "environmental complexity" and systems thinking? Environmental complexity is being defined as the level of complexity in decision making. (3) What is the relationship between locus of control and systems thinking? (4) What is the relationship between the additional mediating variables identified in this study and systems thinking ability? Those mediating variables are gender, age, occupational level, and educational level.

Methodology

This section describes the research methodology. A discussion of the general approach, subjects, instruments, and assumptions made about the data before analysis will be undertaken.

General Approach. The purpose of this study was to investigate the relationship between the predictor variables and the criterion variable, systems thinking. Since this research is dependent upon the relationship between given attributes of the subjects and the criterion variable, an objective, quantitative methodology that provided descriptive statistics was utilized. Specifically, this study is correlational in nature. By analyzing the relative effects of predictor variables in combination, via multiple regression, a better prediction can be made as to their relationship to the criterion variable (Anderson, 1990).

Subjects. The subjects in this study were selected from intact occupational groups, classified as managerial, professional, technical, and clerical/support staff of a large, US-based corporation. Because this research relied upon given attributes of the subjects, i.e., classified into specific occupational groups, random assignment was not an appropriate selection procedure (Kerlinger, 1986, p. 349). In the case of the managerial and technical populations, an on-going training class was being conducted for those respective audiences and these groups were asked to participate in the study. Summer vacations contributed to a smaller sample size than expected. Nonetheless, the sample size of 77 was large enough for the number of variables in the regression analysis.

Instruments. Five instruments were used in this study. This researcher received permission to use those instruments which were developed by others from the authors themselves. Reference to those instruments involve Tuckman's Interpersonal Topical Inventory and Pettersen's Perception of Internal-External Locus of Control in the Workplace. The Demographic/Environmental Data Survey and the Post-Evaluation Questionnaire were developed by this researcher. The Structural Integration Assessment is a compilation of a concept map, causal map, and systems archetype which are all tools developed by others to measure different thinking processes. These instruments will be discussed in more detail below.

Tuckman's Interpersonal Topical Inventory (1966a). This instrument measures low to high (1-4) stages of cognitive complexity. Tuckman's ITI incorporates all the underlying structural components of cognitive complexity that were proposed by Harvey, Hunt, & Schroder, (1961). Those four stages of cognitive complexity that had been postulated by Harvey, Hunt, & Schroder (1961, pp. 87-90) and which is captured and measured by Tuckman's ITI are:

Stage 1:	Dependence on absolutism, external control
Stage 2:	More differentiated than at Stage 1 - Questioning of absolutistic control yet dependence on external support/help
Stage 3:	Emergence of internal causation in order to experience consequences; mutuality, conditional dependence
Stage 4:	Most abstract stage; development of internal and informationally based concepts that act as a referent for evaluating feedback

The progression to higher, more abstract stages are possible if the conceptual level and developmental (environmental) conditions are favorable to such development. It is assumed that environmental conditions facilitate openness to the discrepant conceptual differentiations required for progression (Harvey, Hunt, & Schroder, 1961, p. 87). Development of more abstract conceptual structures emerge as a result of the integrations that occur at each level along the concrete-abstract dimensions (Harvey, Hunt, & Schroder, 1961, p. 87).

The progressive development at each level which is facilitated by (favorable) environmental conditions in order to induce openness of the conceptual system of the individual to differentiations and integration at each stage also includes the progression of the self from a dependence on external sources to a reliance on internal causation--the other predictor variable in the study, locus of control.

The ITI incorporates the underlying components of integrative complexity based on the differentiation at each stage and the emergence of internal causation as one progresses to higher stages. All of this is made possible by the environmental influences on the conceptual system.

The ITI measurement represents all combinations of the four conceptual system stages just described. Subjects who take the test are asked to choose one each of a pair of items that best represent how they would respond to an interpersonal topic designed to present uncertainty, discrepancy, or constraint and the need to resolve this interpersonal conflict. As an example, one question stem, "When I am criticized," would be followed by six different pairs of responses. The subject must pick one response from each pair. Each member of a pair represents a typical response for a different system. All possible paired combinations of the four systems go to make up the six pairs (Tuckman, 1966b). The final system score is determined by comparing each of the subject's scores to the appropriate norm-referenced group.

Test-retest reliability coefficients for each system score range from .42 to .54 (Tuckman, 1970). Criterion-related validity reported by Tuckman (cited by O'Neill, 1985, p. 81) indicate a correlation of .54 between the Paragraph Completion Test and the ITI.

Pettersen's (1982) Perception of Internal-External Locus of Control in the Workplace. This questionnaire is composed of two parts. The first aims to measure the perception of the subject regarding his level of control in the work situation. The person has to respond (on a Likert-type, 5-point scale) to 28 questions reflecting different occupational aspects and events which are under his own control. Adding the responses from the scale and dividing that result by 140 (which represents the total for part one) results in the score for part one. The higher one scored on this part (i.e., a 90%), the more internally oriented that respondent is.

The second part of the questionnaire measures the perception of the subject according to the influence which he attributes to the different external causes encountered in his work situation (those causes being: chance, superiors, co-workers, subordinates, organizational politics) (Pettersen, 1985, 1982).

Part two consists of 18 questions, also based on a Likert-type, 5-point scale. The scoring procedure and the interpretation is the same as in part one: Adding the responses from the scale and dividing that result, this time by 450 (18 questions x 25 possible points for each question due to the 5 subscales for each question: chance, superiors, co-workers, subordinates, organizational politics). Higher scores on this part reflects the respondent's feeling that other causes influence aspects and events in his job.

These two parts reflect the two conceptual distinctions of this construct: that of locus of control and causal attribution, respectively. The first part of the questionnaire which measures the subject's perceived influence over several reinforcements contains statements such as, "In my current job, I feel I can influence raises in my salary." The second part, focusing on the perception of control exerted by various causal agents over the same reinforcements, contains statements such as, "In my current job, the degree to which each of the different causes (chance, superiors, co-workers, subordinates, organizational politics) can influence my receiving a raise in salary" (Pettersen, 1982).

Data obtained with this questionnaire show that the reinforcement control scale does not correlate systematically with the causal attribution scale and, therefore, contributes to the conceptual distinction of locus of control and causal attribution (Pettersen, 1987, p. 207).

This questionnaire which was designed specifically for the work context, correlated with the criterion variable, job satisfaction, better than Rotter's I-E scale ($t=2.50$, $p < .01$), suggesting its practical usefulness (Pettersen, 1987, p. 207). Internal validity for this instrument was undertaken by a test-retest procedure and resulted in Alpha coefficients ranging from .90 to .96 (Pettersen, 1982, p. 11).

Where this questionnaire measures both the subject's perception of his own power in the work environment, as well as his perception of power held by other causal agents within the context of the work environment and structural constraints, it contributed to a realistic and holistic look at the respondents.

Demographic/Environmental Data Survey. The additional predictor variables age, gender, occupational and educational levels, and the perception of complexity in decision-making were accounted for in this study via the Demographic/Environmental Data Survey developed by this researcher.

Structural Integration Assessment. This assessment was used to measure the criterion variable, systems thinking. The assessment consisted of three parts:

Part I: Concept Map Development. Construction of a self-generated concept map which visually illustrates the subject's degree of progressive differentiation by the number and kind of valid relationships recognized among concepts in a particular content area was used. This content area was based on a business story illustrating one of the frequent systems archetypes: Limits to Growth (Senge, 1990).

Part II: Causal Map Representation. The construction of a causal map illustrates those key variables which influence each other in a closed-loop causal relationship.

Part III: Systems Archetype, Limits to Growth, Application. The systems archetype represents a generic template which identifies the patterns that control events (Senge, 1990). Construction of a systems archetype provided the opportunity for each subject to demonstrate an application of the dynamic interconnections operating within a department of a corporation.

Interrater reliability was undertaken for all three systems thinking tasks. The reliability procedures were adapted from Eichelberger's (1989, pp. 132-133) methodology for calculating the percentage of agreement between two scorers. There were two scorers for each of the tasks: the principal scorer and the interscorer. The procedures resulted in reliability measures of 88% for the concept maps; 81% for the system archetypes; and 88% for the causal maps.

Post-Evaluation Questionnaire. The Post-Evaluation Questionnaire was developed by this researcher. It was a Likert-type assessment asking the respondents' perception of the complexity of the business story, their interest level, and any additional comments.

Assumptions made about the data. Several decisions needed to be made about the data before analysis:

- The number of subjects from managerial and professional groups were combined due to the fact that there were only three subjects from the professional group.
- The number of subjects from the Post-Graduate category and the subjects from the Masters category were combined into one Graduate category due to the fact that there was only one response in the post-grad category.
- In order to remove the non-essential colinearity involving age, several additional computational notations were included with this variable.
- Occupational level 4 (Support) and Educational level 1 (High School) are used as the reference group. The results generated from the managerial and technical groups will be compared to this support group. For example, those in the managerial group receive 7 points higher on the causal map in relation to the support group. The same interpretation holds true for the educational level.
- Dummy coding was used to check for a nonlinear relation of the cognitive complexity variable.

Results

This section presents the results of the data analysis. A quantitative analysis of the major predictor variables was undertaken. A description of the study population will precede the analysis of results.

The group of 77 subjects (65% response rate) was drawn from intact occupational groups from a large, US-based telecommunications corporation. Those groups being classified as managerial, professional, technical, and clerical/support staff. The actual frequencies associated with each occupational level is presented in Table 1.

Table 1. Occupational Level Frequencies: Study Population

Occupational Level	Frequency	Percent	Cumulative Frequency*	Cumulative Percent
Managerial	33	43.42	33	43.42
Professional	3	3.95	36	47.37
Technical	21	27.63	57	75.00
Clerical/ Support	19	25.00	76	100.00

*Frequency Missing = 1

The educational levels attained by the study population indicate that almost 69% of the subjects in the study have not pursued formal education past the two-year post-secondary level. A breakdown of those educational levels for the study population is as follows in Table 2.

Table 2. Educational Level Frequencies: Study Population

Educational Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
High School	34	44.16	34	44.16
Two-Yr. Post-Secondary	19	24.68	53	68.83
Bachelor's	18	23.38	71	92.21
Master's	5	6.49	76	98.70
PostGrad	1	1.30	77	100.00

It was hypothesized that the higher one scored on the measure of cognitive complexity (range being 1-4, with 4 representing the most abstract level of thinking, possessing the ability to deal with ambiguities and be able to see many interconnections) the more that person was able to think systemically. Table 3 illustrates the stages of cognitive complexity of the study population.

Table 3. Stage of Cognitive Complexity: Study Population

Stage of Cognitive Complexity	Frequency	Percent	Cumulative Frequency*	Cumulative Percent
1	23	32.4	23	32.4
2	29	40.8	52	73.2
3	14	19.7	66	93.0
3.5	1	1.4	67	94.4
4	4	5.6	71	100.0

*Frequency Missing = 6

Notice that 73 percent of this study population possess the tendency to think more concretely (as represented by Stages 1 and 2). Environmental complexity, defined as the level of complexity in decision making, is presented next in Table 4. This question was scored on a scale of 1-5, with 5 representing decisions of extreme complexity (i.e., ill-defined, ambiguous situations).

Table 4. Level of Decision Making: Study Population

Level of Decision Making*	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2	11	14.3	11	14.3
2.5	4	5.2	15	19.5
3	24	31.2	39	50.6
3.5	7	9.1	46	59.7
4	19	24.7	65	84.4
4.5	8	10.4	73	94.8
5	4	5.2	77	100.0

*Scale 1-5

The means and standard deviations for the study population are given below for all the variables.

Table 5. Means and Standard Deviations: Study Population

Variable	N	Mean	SD
Stage of Cognitive Complexity	71	2.0	0.9
Locus of Control	77	60.9	13.1
Causal Attribution	76	58.0	11.7
Decision Making	77	3.4	0.9
Educational Level	77	1.9	1.03
Interest	71	3.4	1.1
Complexity	71	2.86	0.9
Age	76	41.9	7.87
Concept Map	61	36.9	17.9
Causal Map	62	46.5	16.5
Systems Archetype	63	57.2	20.7

Differences with N reflect missing data

The next statistical analysis involved examining the degree of relationship between the predictor and criterion variables in the study. The significant findings from the correlations are highlighted:

- Age and gender were found to be nonsignificant.
- Occupational level and educational level were found to be highly significant with completion of the causal maps and systems archetype (r=-0.485, p .00001; r=-0.393, p .001).
- The negative correlation generated for occupational level signifies that those in the lower occupational levels (i.e., 1= managerial; 2=professional) performed higher on that criterion measure.
- Performance on the concept map task for all the variables was rather lackluster.
- Decision-making was found to be nonsignificant.
- Cognitive complexity exhibited a statistically significant correlation with the systems archetype task (p .007).
- Locus of control and causal attribution were highly significant in relation to each other (p .002). Here, the more the subject recognizes the influence of external factors, the more the subject tends to perceive control of these same factors.
- A higher internal locus of control also contributed to a statistically significant finding on the performance of the causal map (p .015).

- The non correlation between cognitive complexity and locus of control supports other research[1] which also failed to find a relationship between locus of control and various measures of differentiation.
- Interest was also statistically significant, especially with the causal maps and systems archetypes (p .025; p .042, respectively).

In this study, three sets of regressions had been undertaken. The three regressions are for the three separate tasks, i.e., concept map, causal map, and systems archetype, which were used to measure the criterion variable. The significant predictors from the multiple regressions are reported in Table 6:

Table 6. Significant Predictors of Systems Thinking Tasks

Systems Thinking Tasks	Percentage of Variance Explained (Adjusted)	Significant Predictors
Causal Map	46%	Occupational Level Educational Level Cognitive Complexity
Systems Archetype	19%	Occupational Level Cognitive Complexity
Concept Map	4%	Perception of Complexity

The above predictors account for 46% (adjusted) of the variance on the performance of causal maps and produced a significant equation (F=7.89, p .00001). For those in managerial positions, the predicted value of the criterion variable will increase by 8.6 points. The predicted value of the criterion variable for those in technical positions would decrease by 11 points. For the educational levels, those possessing a post-secondary education will increase the predicted value of the criterion variable by 5 points; those with a bachelor's degree will increase the predicted value by 14 points. The predicted value of the criterion variable for those possessing experience on the graduate level would decrease by five points relative to the reference group.

Regarding cognitive complexity, there emerged a non-linear relation: With each unit increase up to Stage 2 in cognitive complexity, there is an increase in the causal map score by 9 points (i.e., going from Stage 1 to Stage 2). Progressing from Stage 2 to Level 3 increases the causal map score by 21 points. Going from Stage 3 to 4 produces an increase in score by another 9 points. Therefore, the difference from a Stage 2 to Stage 4 is 30 points.

For the systems archetype, 19% (adjusted) of the variance is accounted for by two predictor variables: Occupational level and cognitive complexity. This regression also produced a significant equation (F=5.48, p .002). For those in managerial positions, the predicted value of the criterion variable will increase by 16 points. For those in technical positions, the predicted value of the criterion variable will also increase by 5 points. Cognitive complexity emerged in linear form in this particular regression: for each unit increase in the predictor variable, for example going from Stage 1 to Stage 2, or Stage 2 to Stage 3, etc., the predicted value of the criterion variable will also increase by 6.7 points.

For the concept map, only one predictor variable, perception of complexity, remained in the analysis to produce an equation approaching significance (F=3.73, p .058). This one predictor variable accounted for only 4 percent of the variance in the criterion variable, concept maps.

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[1] Due to the apparent similarities between locus of control and differentiation constructs, other researchers (Rotter, Chance & Goldstein, to mention a few, as reported in Lefcourt, 1982, p. 70) also failed to find a relationship between locus of control and various measures of differentiation.

Discussion

The overall results of these findings indicate that there may be a sequence to learning; i.e., that causal influences are detected with greater understanding than the structural patterns inherent in the systems archetypes and the causal interactions take precedence over the hierarchical structure inherent in the concept maps. Even one subject in the study commented on the Post-Evaluation questionnaire that he found the concept maps difficult to do without using feedback..."I tend to think in terms of causal loop diagrams and not in terms of hierarchies."

Having occupational level emerge as a significant regressor made a lot of sense from both a statistical and a substantive point of view. Even though internal locus of control had a very strong relationship with the criterion measures, causal map and systems archetype, (r=.30, p .01; r=.23, p .06, respectively) it was not included in the final model due to the fact that whatever relationship it had with these criterion measure was redundant with occupational level, which had a stronger correlation with the criterion variables (r=-.48, p .00001; r=-.39, p .0016, respectively).

Generally, those in higher educational levels performed better on the criterion measures, especially the causal maps and system archetype. There did emerge a decrease in performance for those with higher levels of education. This may be due to the fact that only 6 subjects were in this category, accounting for approximately seven percent of the total sample.

Having cognitive complexity emerge as a significant regressor in predicting success on the systems thinking tasks, causal maps and systems archetypes, lends support to Richmond's (1994) assertion that "cognitive overload" is a significant reason for individuals giving up when it comes to engaging these particular thinking skills. In this study, it did not appear that the subjects suffered from "cognitive overload." In fact, the more abstract the subjects were in cognitive complexity, the better they performed.

Finally, having the perception of complexity emerge as a regressor in the completion of concept maps can be interpreted in light of research reported by Schroder, Driver, & Streufert (1967) that a moderate amount of complexity is not harmful to complex performance. This research seems to support that finding that an optimum amount of complexity spurred the subjects to successfully complete the concept maps.

Limitations on the generalizability of results from this part of the study is warranted due to the fact that only 4 percent of the variance in the criterion measure, concept map, was accounted for and only 19 percent of the variance in the criterion measure, systems archetype, was accounted for.

Conclusions, Implications, and Recommendations

Given these limitations, the findings of this study are still strong enough to support two conclusions. First, cognitive complexity and occupational level were consistent predictors for the causal maps and systems archetype measures. Second, the relationship between the predictor variables and systems thinking is very involved and complex.

The first major implication is that further research is needed to determine other mediating variables that could contribute to the variance in these criterion measures. The second implication is whether there is a sequence to the various thinking skills as has been proposed by Richmond (1993). The results have some potential implications for business training also. For example, if we expect technical workers to engage in systems thinking, they may have to be exposed to the same experiences and educational opportunities the managers and professional workers receive. In light of all the above considerations, the following recommendations are made·

1. Study the effects of other potential mediating variables.
2. Design an experimental study whereby the subjects are exposed to the tools and techniques of systems thinking/system dynamics; i.e., causal loops, systems archetypes, simulations in different order to determine its effect on learning.
3. Study the effects that the inherent managerial competencies have on technical workers engaged in systemic thinking.

Systems thinking focuses our attention on those dynamic connections and interdependencies in any given business issue. It has the potential to assist all in the organization to embrace a holistic perspective, especially given the proliferation of restructurings in corporations today. Thinking this way allows one to see and understand the whole of a situation. By living this way, one also possesses the freedom and power to design one's own life.

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Leveraging Quality Initiatives Through Action Technologies

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Many organizations are implementing Quality Management or Organizational Learning initiatives. Some are trying to do both. Comparatively few are successful in accomplishing their objectives. In attempting to develop team-based, critically reflective, quality-driven learning, they fail to draw on action technologies or frequently employ the wrong action technology for the wrong reason. Organizations need a "road map" to guide them in the use of action technologies. This paper provides such a road map.

The three action technologies--action research, action learning, and action science--can be critical in leveraging quality initiatives. However, there is often little conscious linkage of action technology to such initiatives. When an action technology is utilized, it is often employed incorrectly. This paper outlines the characteristics of the three technologies and provides a road map that can leverage quality initiatives and contribute to the creation of learning organizations.

Problem Statement

Numerous organizations are implementing Quality Management initiatives at a furious pace. At the same time they are also striving to become learning organizations. As organizations strive to develop team-based, critically reflective, quality-driven learning, they often attempt to implement the wrong action technology for the wrong reason. Organizations, therefore, need a "road map" to guide them in the appropriate choice and use of action technologies.

Theoretical Framework

The three action technologies--action research, action learning, and action science--all have their theoretical roots in proactive, practical theorists. Kurt Lewin (Marrow, 1969) saw action research as a means for involving individuals affected by a problem as participants in the solution of the problem. Reg Revans (Revans, 1980) sees action learning as a way to test the underlying assumptions of problems by having outsiders (who view problems in a new light) ask insiders challenging questions. Chris Argyris (Argyris, Putnam, and Smith, 1985) sees action science as a process for discovering the underlying reasoning that causes individuals and organizations to unknowingly create problems.

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Research Questions

1) How can each action technology uniquely support the implementation of Quality Management initiatives?, 2) How can each action technology uniquely support the development of Learning Organizations?, and 3) When should each action technology be used?

Methodology

Literature review and logical analysis were used to answer the three research questions. Literature review was used to define, identify the characteristics, and specify the uses of each action technology. Logical analysis was used to develop matrices demonstrating the appropriateness and applicability of each action technology in the support of Quality Management initiatives and the development of organizational learning. It is innovative practice to compare action technologies as is done in the matrices. Such juxtaposition allows for direct comparisons of the technologies relative to the types of technology, each other, and a broad area of inquiry (e.g., barriers to Learning Organizations).

Quality Management Context

Recent surveys conducted by Arthur D. Little and others indicate that only 20 to 36 percent of companies with TQM programs achieve tangible improvements in quality, productivity and competitiveness (Training and Development, June 1994). One reason for the low improvement, usually after considerable expenditure of training funds, is failure to change organizational behavior. Employee involvement, which can be considered a main pillar of Quality Management, is often spotty, at best. Top management may, at the same time, provide only limited support, or have limited knowledge of what Quality Management entails if it is to be successful.

Three rather pronounced trends in the evolution of Quality Management add impetus to the use of action technologies. The first is reengineering of the business processes, which can be radical and far-reaching. "People who once did as they were instructed now make choices and decisions on their own instead" (Hammer & Champy, 1993, p. 65). No company better exemplifies the power of linking action technologies to Quality Management than GE. Their strategy centers on use of three "weapons," otherwise known as management techniques: Work-out, Best Practices and Process Mapping. (Fortune, August 12, 1991, p. 41). The centerpiece is the work-out, with over 200,000 GE employees having experienced one by mid-1992, less than four years after they were inaugurated. They are patently an action learning approach, with small groups brought together, empowered and allowed to develop their own problem solving agenda. The second related trend is the transformation of organizational culture, recognizing that organizations cannot change processes and create a quality emphasis without concurrently changing what people value and the way they think. The third trend brings the emphasis on using action technologies full cycle by recognizing the interlinkage between the continuous process of improvement (Kaizen) of Quality Management with the need for a continuous process of learning (The Learning Organization). It is this confluence of the two streams--Quality Management and Learning Processes--that produces the opportunity to use action technologies.

Harnessing the Action Technologies to Leverage Quality

When an organization is implementing Quality Management or striving to be a learning organization, unforeseeable problems, obstacles, and barriers will inevitably occur. While organizations cannot avoid all potential implementation problems, they can judiciously utilize action technologies to help solve problems once they do occur. These action technologies can be powerful in facilitating the authentic progress of Quality Management initiatives which are floundering or experiencing difficulty. Specifically, action technologies can promote active employee participation, increase organizational ownership, encourage new insights, and challenge established perspectives on organizational problems or dilemmas. Thus, action technologies, by engaging employees directly in wrestling with difficult or problematic issues, can help achieve increased organizational congruence.

General Characteristics and Quality Management

The first matrix display (Table 1) on General Characteristics depicts some critical interfaces between various aspects of a technology (e.g., critically reflective) and the three technologies themselves.

The first matrix or road map outlines both similarities and differences between the technologies in these selected areas, providing an index to which technology is best suited to a given area of interest. For example, it shows that the Action Learning Set and Action Science Group represent a more complete fit than action research team if critical reflectivity is an issue. Similarly, systemic perspective is better served by Action Learning Sets and Action Science Groups. If using an iterative process, Action Research and the Action Learning Set are more suitable than Action Science Group. As depicted in the matrix, there can be subtleties in the way questions are framed, depending on which action technology is employed.

The second matrix, labeled Quality Management, serves to answer the first research question relative to how each action technology can support the implementation of Quality Management initiatives. It vividly shows that all three technologies can be used to treat a variety of areas that can facilitate the implementation of Quality Management.

Reviewing the various interfaces between type of technology and the three technologies in Table 2, it becomes evident that there is a very strong match up with the various foci of Quality Management, particularly as concerns the need to transform organizational thinking. As Watkins & Marsick suggest (1993, p. 120):

> All three action technologies are aimed at organizational change. In action research, people use data to inform action. In action reflection learning, people learn how to learn from their experience so that they can act more effectively. And in action service, people examine their experience to see patterns of learning, or meta-learning.

Any of the three technologies can have a favorable effect. It becomes a matter of organizational fit.

General Characteristics of Action Technologies Matrix

Table 1

	Names of action technology groups?	Focus of the action technology method?	Does the group need a facilitator?	Is an iterative process used?	What types of questions are asked?	Technology frames or re-frames problems?	Technology solves problems?	Technology challenges underlying reasoning?	Technology is critically reflective?	Technology collects data?	Type of data collected by technology?	Can be used at the individual level?	Can be used at the team and/or group level?	Can be used at the organizational level?	Technology uses systemic viewpoint?	Action technology requires psychological health?
Action Research	Action Research Team.	Problem solving.	No.	Yes.	"What is the problem and how can it be solved?" or "Have you tried...?"	Sometimes.	Usually.	Sometimes.	Usually.	Yes.	All types (both qualitative and quantitative) as needed by the AR team.	No.	Yes.	Yes, but in a limited way (several AR teams).	Sometimes.	No.
Action Learning	Action Learning Set.	Insightful questioning.	Yes, called a "set advisor."	Yes.	"Have you considered the possibility of...?" or "Have you tried...?"	Yes.	Sometimes.	Yes.	Yes.	Yes.	Usually qualitative such as cases, life histories, or group interviews to share problems with the AL set.	No.	Yes.	Yes, but in a limited way (several AL sets).	Yes.	No.
Action Science	Action Science Group.	Competence acquisition and intervention.	Yes, called a "group facilitator."	No.	"What is your reasoning around...?" or "What were you thinking or feeling but not saying?"	Yes.	Sometimes.	Yes.	Yes.	Yes.	Usually qualitative such as individual cases or "maps" to share reasoning with AS group.	Yes, but only by experienced individuals in limited ways.	Yes.	Yes, but in a limited way (organizational defensive routines and maps).	Yes.	Yes, participants should not be in therapy.

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Action Technologies & Quality Management Matrix

Table 2

	Useful in obtaining commitment by top management?	Useful in integrating Quality Management as part of the work process?	Useful in developing "win/win" relationships with customers and suppliers?	Useful in educating employees?	Useful in removing barriers to teamwork?	Technology is customer-driven?	Technology is data-based?	Useful in determining the need for Quality Management?	Can detect and/or identify implementation problems?	Can detect and/or identify utilization problems?	Can develop and/or identify solutions?	Technology has a built-in monitoring procedure?
Action Research	Yes, if a member of top management on AR team or if AR team reports to top management. No, if top management can ignore or override AR team.	Yes, especially if this is the question or problem the AR team is addressing. No, especially if the "false starts" by team require a lot of re-work.	Yes, especially if customers and suppliers are on AR team. No, if AR team ignores or overlooks customers and suppliers.	Yes.	Yes, AR team works together to solve problems. No, if team dynamics interfere.	Can be, does not have to be.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes, AR team.
Action Learning	Yes, if top management involved in AL set or sanctions AL process. No, if top management can override or ignore AL set.	Yes, if this is the problem brought to the AL set. No, if AL set is not addressing or unfamiliar with Quality Management.	Yes, even if customers and suppliers are not in AL set. No, if AL set never addresses or discusses.	Yes.	Yes, especially if teamwork is an overlooked issue. No, if AL set participants can not implement AL set's suggestions.	Can be, does not have to be.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes, AL set.
Action Science	Yes, if commitment by top management is discussible. No, if commitment by top management or organizational defensive routines are undiscussible.	Yes, if organization is unwilling to determining why it is resistant to Quality Management. No, if AS group not addressing or unfamiliar with Quality Management.	Yes, this is one ideal of Action Science. No, if customers and suppliers are not part of the case or an issue raised by the AS group.	Yes.	Yes, if this is an issue in the case and the participants are psychologically healthy. No, if team barriers are undiscussible, if barriers based in psychosis, or one team member is psychologically unhealthy.	Can be, does not have to be.	Yes.	Yes.	Yes.	Yes.	Yes.	No.

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Action Technologies & Driving Forces of the Learning Organization Matrix

Table 3

	Promotes creation of organizational climate conducive to Quality Improvement?	Facilitates re-engineering of processes though knowledge of workers themselves?	Useful in bringing about team integration and effectiveness?	Increases meaningful dialogue and self-directed learning?	Builds a sense of ownership and empowerment?	Encourages cross-boundary communication?	Induces critical discourse?	Creates environment of trust?	Promotes learning that occurs naturally and spontaneously?
Action Research	Yes, engagement and intensity can build sense of integrity with collective goal of AR team.	Yes, helps induce critical reflection/thinking by causing systemic addressing of processes by AR team.	Yes, AR design provides for systemic focus and team exploration.	Yes, embedded in the way AR is autonomously performed with all input to the process carefully weighted and considered.	Yes, because broad involvement tends to be natural outgrowth.	Yes, through attention to AR team composition.	Yes, process is fueled by wide discourse and interaction.	Yes, intensity of inquiry places high value on individual contributions to group knowledge producing trust.	Yes, AR team usually eases into a natural iterative learning rhythm.
Action Learning	Yes, AL set empowers employees, creates climate of trust, and promotes critical/creative thinking.	Yes, when adequately sponsored by top management can cause in-depth and free ranging process mapping to occur.	Yes, occurs naturally, provided attention is given to AL set composition and latitude is given by the leadership structure.	Yes, inherently involves collaborative action and learning. If AL set has proper composition, then this should occur naturally.	Yes, outcome is a result of joint involvement with others and there tends to be a sense of keen ownership and joy in creativity.	Yes, encouragement of fresh questions and structuring of AL sets to include mixing of members, cross-organizationally involves a sense of boundarylessness.	Yes, can create a strong bonding effect among AL set members, opening up deep communication.	Yes, participants operate as equals and openly share their views leading to high trust.	Yes, learning is continuous and knowledge is widely shared.
Action Science	Yes, AS group in its design creates a mind set in a community of inquiry that probes factors that retard progress.	Yes, by its nature cases sharpen focus on events whose expected results were not achieved. AS group makes consideration of negative outcomes and criticism behaviorally acceptable.	Yes, allows for examining of unspoken norms, rules, information, value judgements, and assumptions as a part of the AS group process.	Yes, creates a climate in which deep dialogue and free communication of values is made possible by content self-selected by AS group members.	Yes, AS group members own their issues and reasoning and group participation empowers members.	Yes, group composition provides mixes and matches across boundaries which encourages challenging thinking.	Yes, AS group is based on critical discourse.	Yes, AS group members share privately held thoughts and feelings leading to high trust.	Yes, reflecting upon reasoning leads to systemic and unexpected insights.

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Action Technologies & Barriers to Learning Organizations*
Matrix

Table 4

	Changes mental models?	Overcomes learned helplessness?	Overcomes tunnel vision?	Reduces truncated learning?	Reduces individualism?	Reduces culture of fear and/or disrespect?	Addresses societal issues?	Capitalizes on diversity?	Reduces entrenched bureaucracy?	What is learned by participants?
Action Research	Sometimes, depends on the problem selected and the solution developed.	Sometimes, if the AR team is empowered and allowed to complete its' tasks.	Usually.	Sometimes, especially if the AR team is given appropriate time and support to learn AR.	Usually, especially if everyone on AR team is an equal member.	Sometimes, if this is the issue examined.	Sometimes.	Yes.	Sometimes, depends upon the problem addressed by AR team.	Process for iterative group problem solving.
Action Learning	Yes.	Sometimes, if the AL set addresses this issue and AL participants able to enact suggestions.	Yes.	Usually, especially if the AL set is supported with appropriate time and resources to learn AR.	Usually, depends upon the participants of the AL set.	Sometimes, if this is the issue examined.	Sometimes.	Yes.	Yes, AL sets see things in a new way thus reducing entrenchment.	Process for participants to experience questioning insight and to challenge each other's assumptions.
Action Science	Yes.	Sometimes, if the AS group examines the reasoning used to reinforce learned helplessness.	Yes.	Sometimes, especially if the AS group participants are given appropriate time and resources to learn AS.	Usually, depends upon the participants of the AS group, but AS strives towards collaboration.	Sometimes, if this is the issue examined.	Sometimes.	Yes.	Yes, AS groups examine reasoning leading to entrenchment.	Intervention techniques and tools for competence acquisition.

* Based on Marsick and Watkins, 1994.

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Looking at Bright and Dark Sides

The third and fourth matrices or road maps (Tables 3 and 4) answer the second research question in terms of looking at what supports the development of learning organizations. Borrowing from Kurt Lewin's concept of Force Field Analysis they look at "Driving Forces," the brighter side (Table 3) and Restraining Forces, here termed Barriers to Learning Organizations--the darker side (Table 4).

While Table 3 addresses Driving Forces and Table 4, Barriers to a Learning Organization, they both reflect in their own way the ability of the three technologies to overcome normal organizational barriers and capitalize on natural forces that can help advance organizations and learning. What threads its way through both tables is the freeing up of people to interact naturally without the traditional bureaucratic hindrances to creative thought. This is essential. It is both subtle and powerful, and it can be posited that proper use of action technologies can make the difference between a marginal Quality Management initiative and one that is truly successful. Principal properties that stand out and cut across the three related technologies are the ability to foster organizational integration, promote meaningful dialogue and focus collective energies.

Benefits of the Matrices and Leveraging Opportunities

Organizations can leverage their Quality Management programs and their human resources thereby enhancing productivity and output by strategically and appropriately using action technologies. The matrices can facilitate matching the available organizational resources with those needed to enact the action technology (time, staff, training, psychological health, etc.) with the desired level of participation (individual, team, organization, etc.), with the desired outcome (participation, problem-solving, critical reflection, learning, etc.), and identifying situations in which employees can become involved with the difficult issues facing an organization and participate in resolving them.

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Career Development Needs of Safety Professionals

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This study examined the career development needs of safety professionals. The respondents perceived that their level of expertise in the 35 ASTD/DOL trainer competencies was between basic and intermediate. None rated themselves as advanced in their level of expertise. They perceived their level of ethical practice needed little or no change in the future on seven ethical issues while indicating that some attention or change is needed for six of the ethical issues studied.

The safety needs of organizations continue to increase and become more important as safety needs, safety regulations, and other factors demand that employees develop and maintain their competence in a variety of safety-related areas. In order for safety professionals to provide the training needed, they also need to maintain their technical and professional competence as training professionals. What many hiring organizations lack is a systematic way to assess the professional competence and related career development needs of their members. At the same time, many professions including the safety training profession lack a systematic way for employees to assess and plan for their own career growth and development.

The American Society of Safety Engineers (ASSE) embraces the following vision for the safety profession as a field of study and of practice:

> The safety, health and environmental profession will be broadly recognized as accident prevention and environmental health authorities and problem solvers. Professional respect will be founded on an experience-based body of knowledge and a self-regulating organization with minimum qualification requirements and a strong code of conduct (Brauer and Townsend, 1994, p. 48).

Most safety professionals spend the majority of their time helping others change behavior, actions and performance to continually improve safety performance. The new behavior-based paradigm (as opposed to attitude-based) identifies the safety concept as a systems issue, not a personnel issue, that requires a system approach (Hidley and Krause, 1994). Among those system components are safety, health and environmental regulations, as well as other areas of safety-related technical competence. Yet, the acquisition of the skills and competencies required to develop and sustain effective training is a fundamental component of the system often overlooked or neglected by safety professionals. Instead, as can be seen in the ASSE vision referenced above, it appears that technical competence related to regulations and other technical safety considerations is often given priority over training competence. It is interesting to note that the ASSE does recognize the need for ethical conduct as indicated in the last line of their vision statement.

In today's learning organization, keeping functional, professional, and technical skills up-to-date is critical to professional effectiveness (Koonce, 1995) and career development. The American Society for Training and Development (ASTD) and the U.S. Department of Labor identified quality requirements for effective career development efforts in a study reported in Models for Practice (McLagan, 1989). Among the quality requirements identified are the opportunities for participants to focus on current strengths as well as development needs and the need for individuals to identify and seek appropriate developmental support.

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Greenhaus and Callanan (1994) define career development as "an ongoing process by which individuals progress through a series of stages, each of which is characterized by a relatively unique set of issues, themes, and tasks" (p.7). Some career development theorists use the Johari window as a framework for conceptualizing the disclosure and feedback process for personal growth. Emphasis is placed on what the supervisor as well as the employee knows and does not know (McMahon and Merman, 1987). This shared information between the employee and the supervisor is critical in helping to match the current and future needs of the individual to the organization. Effective career development of safety professionals presents a uniquely complex set of organizational challenges. The use of career development activities, such as the Johari Window, and studies such as this may reveal to hiring organizations and employees the need for safety professionals to enhance their competence as trainers.

This study was designed to determine the career development needs of safety training professionals in a three state area who are members of the American Society of Safety Engineers. The results should help universities, professional organizations, consultants and others to plan and deliver the career development activities needed by safety professionals.

Research Questions

This study was designed to answer six research questions:

1. What are the demographic characteristics of safety training professionals?
2. What are the perceptions of safety training professionals regarding the availability, accessibility, quality, and cost of available professional development programs?
3. What is the perceived level of expertise held in each of the 35 trainer competencies identified by ASTD and the U.S. Department of Labor?
4. What is the perceived level of personal need of safety professionals to raise their level of ethical practice in the future?
5. Does the perceived level of expertise (in the four major areas of competency) differ by years experience as a safety professional, by type of department in which they are employed, by whether the respondent was a certified safety professional, by type of training-related education received, or by time spent planning or conducting safety training activities?
6. Does the perceived level of personal need to raise their level of ethical practice in the future differ by years experience as a safety professional, by type of department in which they are employed, by whether the respondent was a certified safety professional, by type of training-related education received, or by time spent planning or conducting safety training activities?

Methodology

The research instrument was developed to answer the research questions identified for study and validated by a panel of Human Resource Development (HRD) researchers. The instrument contained four sections. Section A consisted of questions designed to determine the demographic characteristics of the respondents. Section B was designed to elicit respondents' perceptions of the availability, accessibility, quality, and cost of training programs designed for safety professionals. Respondents were asked in Section C to indicate their perceived level of expertise for the 35 trainer competencies identified by ASTD and the U.S. Department of Labor. In Section D, the safety professionals were asked to indicate the perceived level of personal need to raise standards of ethical practice for the 13 ethical issues identified by McLagan (1989) in the ASTD Models for Practice.

A completely random sample of 347 was selected from the population of 1,793 safety training professionals from Louisiana, Mississippi, and Alabama who were members of the American Society of Safety Engineers. Two mail surveys and a non-respondent telephone follow-up were used to gather the data. Data were analyzed using descriptive statistics, inferential t-tests, and analyses of variance. The alpha level was set a priori at .05. A response rate of 47% was recorded.

In order to determine if non-response and late response bias existed, an analysis of variance was conducted for the five scale means by response wave (first mailing, second mailing, telephone follow-up). Since no significant differences existed in the mean competency ratings by response wave, it was determined that the responses received represented a truly random sample of the population under study and the mail and phone responses were combined for analyses.

Results

The results of the study are presented below by research question.

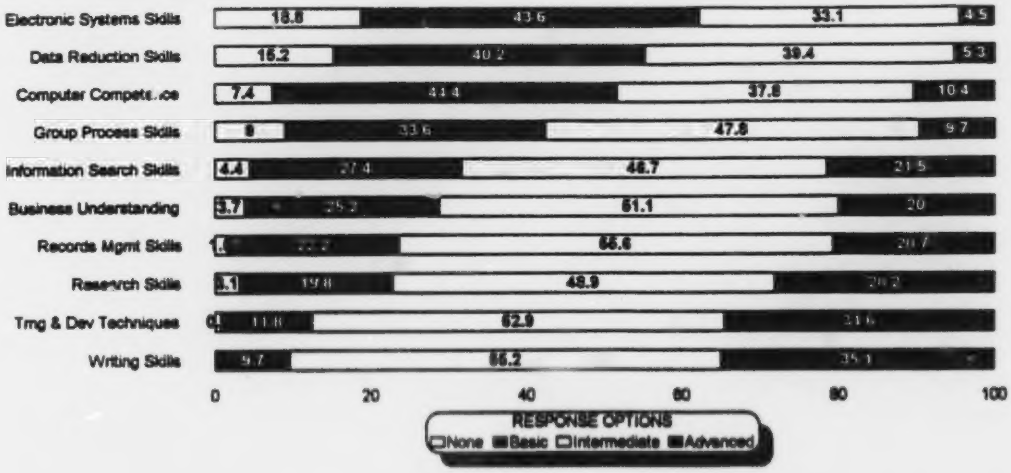
Research Question 1. Less than one-fourth (21%) reported they were Certified Safety Professionals. The respondents had been employed for an average of ten years with their current company and they averaged thirteen years of experience as a safety professional. Most (97%) were male and their average age was 43 years. Almost one-third (32%) spent one-fourth of their time on training activities while one fourth spent 50% (28%) or 75% (26%) of their time, Over one-half (54%) had completed a bachelor's degree and 14% had completed a masters degree. Two-thirds (63%) were in exempt positions. Almost all had participated in training workshops or seminars (93%) while over one-third had participated in training certificate programs (36%) or university courses in human resource development (43%). Almost all (92%) identified themselves as white with some identifying themselves as Black or African American (6%) or American Indian (2%). Over three-fourths (79%) identified the customers of their training as individuals in their own company or organization. They reported being employed in 11 different industries with the largest group (30%) working in the petrochemical industry.

Research Question 2. When asked how available professional development courses or programs were that enabled them to improve there HRD skills, the responses were distributed across the possible answers as follows: frequently available (21%), often available (26%), sometimes available (35%), and seldom available (14%). Over half (60%) were able to access the training programs with minor difficulty. Over half (58%) perceived that the quality of available training programs was good while only 1% felt the quality was poor. Over half (58%) perceived that the cost of available programs was reasonable while over one-fourth (26%) perceived that the cost was unreasonable and some (13%) felt the cost was very unreasonable.

Research Question 3. The safety professionals were asked to rate their level of expertise for each of the 35 trainer competencies identified by ASTD and the U.S. Department of Labor. The safety professionals perceived that their level of expertise in each of the 35 trainer competencies was between basic and intermediate. The competencies were rated on a four-point scale (1-none, 2-basic, 3-intermediate, 4-advanced). None of the safety professionals rated themselves as advanced in their level of expertise. The mean ratings of the competencies ranged from 2.26 (electronic systems skills) to 3.34 (subject matter understanding).

The responses to the ten "Trainer and the Training Environment" competencies are presented in Table 1 in order from the lowest to the highest rated skills. The highest ratings in this area were at the intermediate competence level. The highest rated competencies were research skills, training and development techniques and writing skills. It is interesting to note that the respondents rated themselves much higher on the training and development techniques competency than is indicated by their summated ratings of themselves on the 35 trainer competencies. The areas in which they rated themselves the lowest were electronic systems, data reduction skills and computer competence. They considered themselves to have basic competence in these areas. This group of competencies received the lowest ratings of the four groups with an overall mean of 2.79 ($s = 0.5$) on the four-point scale.

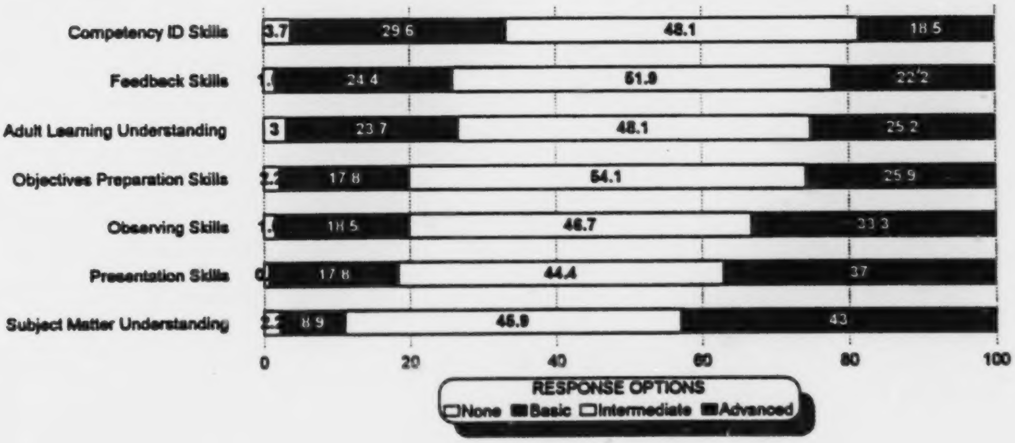
Table 1.
Levels of Expertise for the ASTD "Trainer and the Training Environment" Competencies as Perceived by Safety Professionals



The responses to the seven "Trainer as a Technical Expert" competencies are presented in Table 2 in order from the lowest to the highest rated skills. The respondents rated themselves with an intermediate level of competence and gave their highest ratings in this area to subject matter understanding and presentation skills.

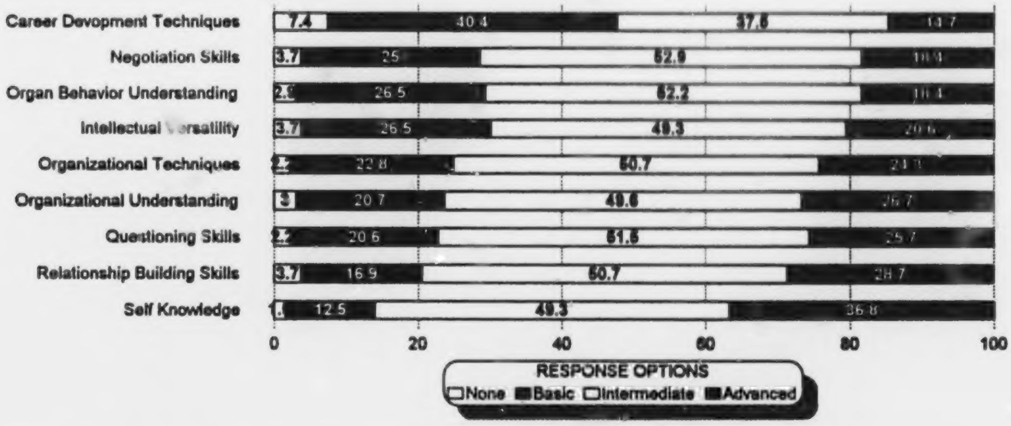
Their perceived competence in the area of subject matter understanding, the highest rated competency out of all 35 competencies, mirrors the emphasis on technical competence in ASSE's vision statement. They rated themselves the lowest, also with an intermediate level of competency, on competency identification and feedback skills. This group of competencies received the highest ratings of the four groups with an overall mean of 3.05 ($\underline{s}$ = 0.6) on the four-point scale.

Table 2.
Levels of Expertise for the ASTD "Trainer as a Technical Expert" Competencies as Perceived by Safety Professionals



The responses to the nine "Trainer as an Organizational Change Agent" competencies are presented in Table 3 in order from the lowest to the highest rated skills. The respondents rated themselves highest on self knowledge and relationship building skills while rating themselves lowest on negotiation skills and career development techniques. The low rating on career development techniques supports the theoretical foundation for this study presented earlier. All of the competencies in this group were rated at the intermediate level.

Table 3.
Levels of Expertise for the ASTD "Trainer as an Organizational Change Agent" Competencies as Perceived by Safety Professionals



The responses to the nine "Trainer as a Manager" competencies are presented in Table 4 in order from the lowest to the highest rated skills. The respondents rated themselves highest on industry understanding and coaching skills. They gave themselves the lowest ratings on cost benefit analysis skills and model building skills.

The low rating on cost benefit analysis skills is especially problematic in a business/industry setting given the need to justify the investment in training. Model building skills need to be strengthened because of the importance of the role of model building in the development of professional competence and training programs. All of the competencies in this group were rated at the intermediate level with the single exception of model building skills, which was rated at the basic level.

Research Question 4. The safety professionals were asked to rate their personal need to raise their ethical practice for the future on the ASTD ethical practice standards on a three point scale (1-needs little or no change, 2-needs some attention and change, 3-needs major attention and change). The respondents perceived their level of ethical practice needed little or no change in the future on nine of the ethical issues listed. They indicated that some attention or change was needed for four of the ethical issues listed and they indicated that none of the issues needed major attention or change. The competencies needing the least attention were avoiding conflicts of interest and maintaining appropriate confidentiality.

The issues that needed the greatest attention were:

- Balancing organizational and individuals needs and interests.
- Ensuring customer and user involvement, participation, and ownership.
- Being sensitive to the direct and indirect effects of intervention, and acting to address negative consequences.
- Making the intervention appropriate to the customer's or user's needs.

Table 4.
Levels of Expertise for the ASTD "Trainer as a Manager" Competencies as Perceived by Safety Professionals

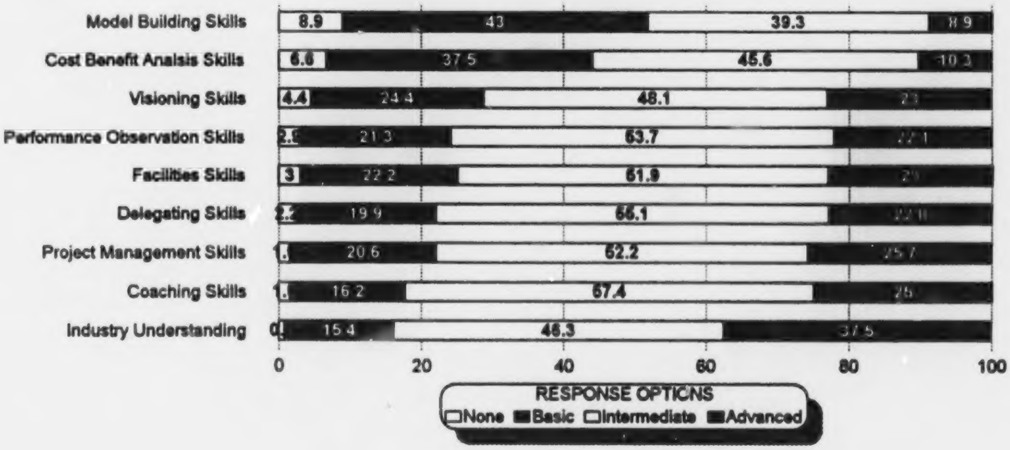
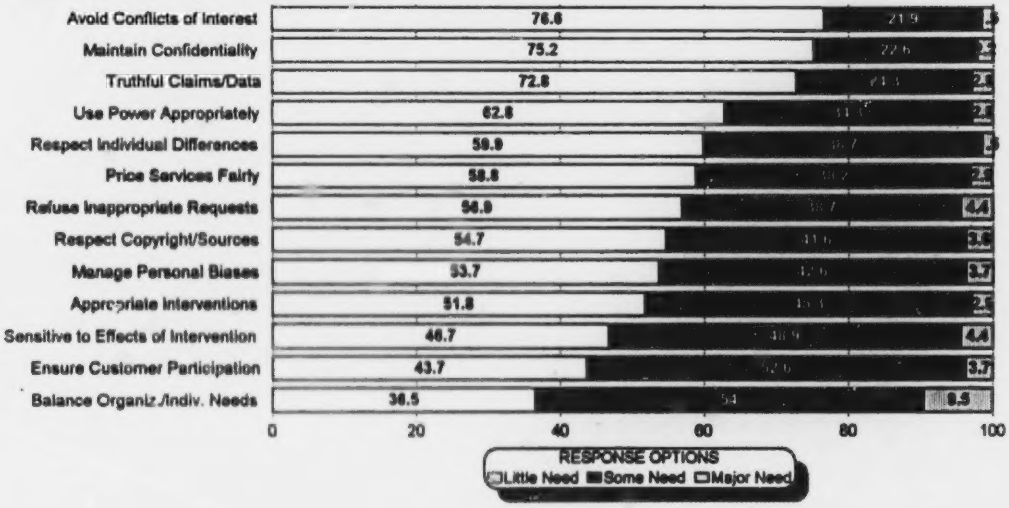


Table 5.
Need to Raise Personal Standards of Ethical Practice as Perceived by Safety Professionals



Research Question 5. The analyses of variance revealed that the safety professionals' perceived level of expertise in the area of technical expertise differed significantly by the type of department (training, safety, safety & training, administration) in which they worked. Those who indicated they were employed in administration rated themselves significantly higher than those who indicated they were employed in a safety department. No differences existed between those who were employed in either a training or a safety and training department, and those who were employed in administration departments

Those who had received a 50-100 hour certificate program and those who had completed at least one HRD course rated their competency level on all four competency areas significantly higher than those who had not. Those who had completed a four year degree in human resource development rated themselves significantly higher on trainer as a technical expert competencies than those who did not have this degree. It should be noted that this analysis was based on only eight individuals in the sample with a HRD degree compared to the rest of the sample. No significant differences existed by whether the respondent was a Certified Safety Professional, years experience as a safety professional or by time spent planning or conducting safety training activities.

Research Question 6. The need to raise their level of ethical practice differed significantly by the type of department in which they were employed. Those who were employed in administration rated themselves higher in their ethical practice than those who were employed in safety and training departments.

No significant differences existed by years experience as a safety professional, whether the respondent was a certified safety professional, or by time spent planning or conducting safety training activities?

Conclusions and Implications

Even though the average safety professional had been with their company for almost ten years, they had very limited experience as safety professionals and it appears that they were not hired initially as safety professionals. This conclusion is supported by the finding that the average respondent had worked as a safety professional for less than three years.

Even though all of the respondents were safety professionals, most function as safety professionals on a part-time basis which indicates that safety training is just one of their responsibilities. This conclusion is based on the finding that 86% spend one-fourth, one-half or three-fourths of their time on safety training. Only 14% conduct safety training on a full-time basis. Almost all of the respondents worked as in-house safety professionals. Continuing education is valued by safety professionals as indicated by the finding that all safety professionals have participated in one or more types of formal training.

Professional development courses or programs are accessible in terms of distance to course locations but they are not as available as safety professionals would like. Safety professionals would participate in more human resource development courses and workshops designed for safety professionals if they were offered. Most safety professionals believe the quality of available HRD programs is good or excellent and the programs are offered at a reasonable cost. University HRD programs can use this information in evaluating the potential for future programming and in the continuous improvement of existing programs.

Safety professionals possess adequate levels of professional competency but major improvements are possible and should be pursued. Safety professionals currently lack advanced expertise in any of the training competencies. This confirms the need for university HRD programs to offer career development opportunities designed to increase the levels of expertise possessed by safety professionals.

Safety professionals who have completed training workshops or an HRD course have higher perceived training competency levels than those who have not. However, Certified Safety Professionals do not have higher perceived training competency levels than those who do not hold the CSP credential. These conclusion imply that the focus of the CSP certification process is on technical safety competence rather than on training competence.

Major changes are not needed in safety professionals' standards of ethical practice. It appears that ASSE's commitment to a strong code of conduct as stated in their vision statement may have contributed to this finding. However, some attention or change is needed in some of the ethical areas. These areas should be targeted by HRD programs as they plan future programming for safety professionals.

This study addressed the career development needs of safety professionals; conclusions and implications cannot be drawn for groups beyond the population studied. However, it is reasonable to believe that the status of other training professionals may be similar to the status of the safety professionals reported in this study. University HRD researchers should conduct additional data based studies of other groups of training professionals to determine if their characteristics and needs are similar to those of the safety professionals. If these characteristics and needs are found to be similar, university HRD programs could use this information to build a model to serve a more diverse clientele. This may also necessitate differentiated levels of programming for entry level and experienced safety professionals in the future as university HRD programs develop and expand..

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Instructional Design in the Context of Situated Learning

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Situated learning theory appears to contain important implications for the both the conduct and teaching of instructional design. This paper examines some of these implications and reports on an action-research study in which the instructor sought to situate a graduate level course in instructional design in a real-world context. Results and thoughts on the study are discussed here.

While recent publications in the area of instructional design (ID), e.g. Rothwell & Kazanas (1992), continue to support the idea of ID as a linear, abstracted and mechanical process which can be "learned" first as a system and then later "applied" in various worksite settings, new theories of learning and action raise critical questions about the whole business of application and in so doing force us to rethink the importance and place of ID theory within the HRD enterprise. The purpose of this research-based paper is to analyze the new thinking and use it to begin to refocus our thinking around the ID process.

Situated Learning and Action: A new environment for Instructional Design theory

The problems faced by current ID theory derive from two separate lines of thinking, though it is possible to discern connections between them. The first falls under the heading of situated learning and describes the latest thinking of Jean Lave and her colleagues about the nature and "locus" of learning. The second falls under the heading of situated action and describes work by Lucy Suchman and John Seely Brown around the nature of expert and everyday actions, particularly as these have to do with the use of machines.

The essences of the various positions appear to be these. According to Lave's recent work (Lave & Wenger, 1991; Chaiklin & Lave, 1992), learning is not some internal cognitive process according to which the individual moves from a state of relative unknowing to a more complete state of knowledge of a particular set of objects. On the contrary, the point is stressed again and again that learning is essentially a socially situated process, defined as "coparticipation" in a "community of practice" (from the Preface to Lave and Wenger). The learner within this discourse becomes a "legitimate peripheral participant," in essence an apprentice who picks up, internalizes various ideas, skills and attitudes within a context peopled by experts whose behavior and understanding of skill the learner emulates and interprets.

Lave downplays the role of the school (college or university) in the transmission of knowledge, preferring instead to focus on "social practice," in the characterization of which learning plays a central and undisputed role. Though the concept of "situated learning" says nothing about the role of ID in the learning process, it clearly suggests that the traditional role of systematic, plan-based ID and how we transmit it as professors and practitioners must be rethought. At the very least, it reasserts the importance of on-the-job training, implying that what trainers bring to situations of learning are not the "normal" groups of skills so beloved of organizations like ASTD. Finally, the emphasis on co-participation carries with it the idea that if learners learn by virtue of their involvement in communities of practice, then the role of the group in promoting learning becomes more than a good idea. In essence, there is no learning without the group.

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Suchman's work is more obviously about ID, a point made very convincingly by Michael Streibel (1989) in a recent review of her thinking (Suchman, 1987). ID is about plans; what we intend to do and how we intend to do it. The question Suchman asks and which Streibel paraphrases is this: "Do human beings, such as teachers and learners, follow plans. . .when they solve real-world problems or do [they] develop embodied skills that are only prospectively or retrospectively represented by plans?" The answer they give is that plans (and by direct implication ID) are essentially "social constructs", accounts of rules which we tend to invoke when we there is a problem or we otherwise feel a need for them. Plans imagine a future of a certain kind or rationally reconstruct a course of action already followed. If that is how plans work in real situations, what does this say about the role of systematic ID in the creation and development of training interventions?

A recent survey of ID theories and prescriptions argued that rather than following or applying good, standard models of ID already developed, practitioners tend to make up their own models as they go along, thus appearing to add to an unnecessary superfluity in this area (Andrews & Goodson, 1980). If Suchman is to be believed, such proliferation is not only inevitable but almost a necessity, precisely because ID represents an "embodied" or situated skill, a set of actions which people take in certain situations when conditions demand it, and in which plans such as ID models operate as useful resources, aids to the successful outcome of a learning experience but by no means casual or necessary for successful action to occur.

Situating Formal Learning: Experimenting with a graduate level course in ID

This paper will argue for a rethinking of ID based on the arguments and theories implicit in the work of Lave and Suchman. It contains implications not only for the role of formal ID theory in the actual conduct of training but almost as importantly for the way we teach ID in graduate HRD programs. As a result of my readings in this area, I redesigned a university-based, graduate-level ID course by replacing fictional scenarios of training problems with two real world situations which I asked students to respond to by designing training interventions. Data were gathered from class participants and later subjected to qualitative analysis. Preliminary results from this study are reported here.

VAE 484/884 is a graduate-level course within a Masters of Arts degree in Adult and Continuing Education, which has an institutionally-recognized minor in Human Resource Development. When I first began teaching this course five years ago it had a course number associating it with an existing course on needs assessment. Partly because of this and partly because of my own beliefs about the importance of the topic, the orientation to needs assessment was retained when the course became "The concept and design of training." More recently, with the approval of the minor in HRD the course became "Instructional Design in HRD."

Despite the explicit link with business and industry, over the years organizational settings other than business and industry have characterized the students' occupational or professional backgrounds, and this has had a bearing on how I have approached curriculum design. For example, it has meant spending less time providing a background on the nature of the training enterprise as it is encountered in the business and for-profit sectors, while talking in more general terms about the process of training. It has also meant that terms like trainer are often less appropriate than, for example, staff development professional and the like. As an orientation to the course, I share, the first night of class, some of my epistemological assumptions. You learn best by doing, I would tell students, by applying and by getting involved with the material. Second, you learn incidentally by doing (so that the learning agenda is also being served by the carrying out of the typical tasks one associates with training or instructional design), and by reflecting on that doing. [Theoretically, this approach has more in common, at least in my own mind, with "active learning" constructs (e.g. Bonwell & Eison, 1991) than with, for example, the work of Kolb, applicable and popular though this may be]. As a result, I explain, case studies or training scenarios are productive ways to pursue learning objectives as they capitalize on this emphasis on doing, while tapping, hopefully, individual students' experiences in the workplace.

[Recent work on project-based learning (Blumenfeld et al., 1992) has reinforced my commitment to the use of this pedagogic methodology.] Finally, in my current approach to the curriculum, I draw on constructivist sentiments, at least for my espoused theory. Specifically, I emphasize "situating cognition in real world contexts, teaching through cognitive apprenticeships, and construction of multiple perspectives" (Duffy & Jonassen, 1992). The issues for actual classroom practices which these principles surface I will leave for the discussion section and symposium interaction.

Until the spring of 1994, students approached the subject matter of curriculum design via scenarios which described organizational contexts, presenting problems and an outline of the task requirements. Students formed groups of varying sizes, from three to six, and spent the semester designing a relevant training intervention response. As a vehicle for communicating their deliberations and approach, we drew on a reporting format, the "program specification document" developed by Kay Abella (1986). The idea of having a model of how the final report should look came early in the course's development as students expressed varying degrees of anxiety in the absence of a vision of the finished product.

Incidentally, this appears to be a problem with many ID models, even when, as in recent "definitive" texts, e.g. Rothwell and Kazanas (1992), they are based on national "standards." Abella's was the only approach we have found (though we have not set out to establish her as the authority in this area) which seems to take account of the day-to-day reality of putting a program together and creating the necessary mechanisms to make sure that all of the relevant parties are kept in the picture. In the context of the present discussion, this makes Abella's approach much more situated and contextual than more theoretically grounded and sophisticated models. The continued emphasis on a "systematic" approach to ID, an approach which smacks hugely of positivistic optimism, is still the norm, as witnessed by the subtitle of Rothwell and Kazanas's ambitious text. And yet, astonishingly, there is little in this pure theory-driven approach which can act as a guide for how to proceed: what are specific steps one may take to create the necessary links between the different components of the ID domain. One is still left to struggle and trust in the integrity of one's own "embedded" skills (Suchman, 1987), skills which surely are susceptible to inquiry, even as they are transmitted between generations of practitioners.

The Present Study

In the spring of 1994, I based the teaching of VAE 484/884 on two "real" cases. I had approached members of the university community about the idea of having my ID class design a training program based on a current problem or need. The result was a request to develop a leadership-based program for undergraduates to be taught through the Office of Student Affairs at the university and, second, to recommend a solution to the non-use, by engineering technicians, of a computer-driven (CNC) machine for crafting tools needed for special projects in the university's College of Engineering. Thus one project dealt with the "soft" skill areas so commonly encountered by trainers, while the other was of a highly-technical nature.

The class of thirteen was divided into two, with each group headed by a coordinator-facilitator, who was also a student in the class and with whom I met once a week for discussion and debriefing. I should mention that complicating this overall design was the fact that the student coordinator of the engineering group was also the chief technician of the unit in which the CNC problem was located. As it turned out and as discussed below, this double-role had significant impact on the unfolding of the group's project.

In the second half of the semester, I asked one of the students, a doctoral advisee of mine, to conduct open-ended qualitatively-oriented interviews with each member of the class to ascertain how they found working on the project and how they thought the class was going. Specifically, I wanted to get a sense of how and what they were learning and how they were feeling--their motivation--at different stages in the accomplishment of the training design. It must, of course be remarked, that despite assurances of confidentiality, due to the nature of the study and the small sample size, study participants knew that I would be reading typed transcripts of their taped responses and thus could be expected to be less open and revealing about their feelings than if the chief investigator--myself--was unknown to them. My interpretation of findings must be judged in this light.

How did the process of having students working on real life, real time training problems work itself out? In more theoretical language, was I creating a situated learning experience within a formal learning context? And, if this was the case, how was my intervention or "treatment" experienced by students? How did they assess the quality and degree of learning which occurred and how motivated were they by the experience?

Situated learning in the context of a classroom. In a single major respect, and speaking subjectively, the class was successful. Let me elaborate. Deep down, I am of the persuasion that when real learning is going on, the commitment, focus and excitement level of learners is high; students commingle and become parts of a vitally synergistic whole, while the teacher has almost disappeared, an important "crutch" at the beginning but unnecessary as learners gain in confidence and competence Grow, 1991). To some degree this happened. Normally, the class met for one evening, once a week. Once the projects got going, the two groups began to meet outside of the normal class hours and towards the end of the semester would often meet up to an hour before the commencement of class. I recall one occasion when I told the groups that we should convene at the normal class time, 7:00 p.m., once they had completed their deliberations. Seven came and no one showed up. Then it was 7:30. Finally, I had to go out and call them in. I had begun to feel lonely and unnecessary sitting there in the classroom, the chairs empty, the overhead projector emitting a disquieting white noise in the middle of the room. In some essential fashion, the learning had taken over and the need for the instructor--even as guide and coach--had all but disappeared. The class did not need my permission to take responsibility for their own learning. The project, their project, had become the driving force of their learning.

Obviously, this single event does not capture the full measure of the experience. (Moreover, my evaluation of this apparent reality was somewhat naive as can be judged from the report of data below.) In important respects the class did not achieve unstated if clearly implied objectives. For situated learning to "work" as a tool in graduate education, it can be argued, it must be possible to see theory in action and to have the opportunity to reflect on process as it unfolds. In important respects then, artificial constraints must be built into the experience which, while providing an opportunity to validate or "reconstruct" the learning which has occurred, nevertheless run counter to the experiences of many trainers faced with real life tasks and assignments. Put bluntly, in real life settings, reflection on learning may be--ARL teams aside--a seldom sought, seldom provided luxury. In formal learning environments, without such reflection it would seem contradictory to call it a class. Of course, the question of whether such reflection on learning experiences occurs with any regularity is as much an empirical as it is a conceptual one, to be examined and discussed in the light of research rather than rhetoric.

As I had originally conceived it, teaching ID in the context of real projects meant providing doses of formal knowledge, mostly at the beginning of the class period. Such knowledge, e.g. about how to conduct needs assessment or what is motivational in instruction, was then somehow to be "applied" by the students working on their projects. Early on, however, it became clear that JIT theory presentation could be not synchronized with project development. Almost from the beginning, the nature of the project as well as the nature, competence and maturity of the student-trainers dictated a class structure, whereby theory would almost always be more abstracted and independent of the individually grounded scenarios they were responding to. In other words, once the projects got underway, even the role of guide and coach was under strain, with the instructor becoming more of a consultant, someone to go to with problems or when an impasse had been reached, a problem solver rather than a guide or coach promoting learning.

From this follows many conclusions, among which I would highlight the following. Even in so-called "introductions" to ID, there is a strong element of artificiality. Though class time can never permit more than a rudimentary exploration of the real-time dimensions of a training intervention, nevertheless the myth persists than somehow the pieces are linked: that there is a real-time, more or less logical link between the various components of the "model"--from needs assessment to objectives, from methods to evaluation and beyond (Andrews & Goodson, 1980; Gilley & Eggland, 1989; Rothwell & Kazanas, 1992). While the desirability of systematically relating discrete operations into a seamless whole may be unarguable, from the perspective of formal theory we are starting from a premise that such linkage is the norm even if rarely followed in practice: that the theory is good but that reality falls short. Apart from the academic dubiousness of this perspective, it cannot be fail to do justice to the nature, control and expression of our individually embedded practices and skills, and ultimately to the true nature of practice and expertise. In a word, one teaches ID one way; it works another. As Suchman has noted, models or (ID) plans "abstract" away from experience and may be useful for that reason; they may simplify reality and allow us to address important dimensions of that reality in our thoughts and evaluations. But it is far less clear either that they direct our activity as practitioners or that they should.

The Students Respond. Data from the qualitative interviews is currently undergoing analysis. Initial summary findings are offered here under a number of headings, reflecting interview questions.

Agenda. Though the protocol question (Could you state your agenda for this class?) was perhaps too pointed, the responses, even from a small group (n = 10), seemed odd. They suggested that students saw the class either as helping them clarify or determine if they were in the right field ("if HRD is right for me") or as providing them with the basics and the theory ("literary background", as one student put it) necessary to function as trainers. In other words, the class would either do something it was not designed to do or would teach them theory and research rather than how-to. Apart from seeming to run counter to ideology (that adult learners come to learning contexts with application and problems in mind), this initial orientation could pose a problem for what lay ahead.

Thus, while I came into the class trying not to make it introductory but to plunge them into a real situation in which they would get a change to get their "feet wet", they seemed to be saying either that they didn't care what the class was about, only that it was about something to do with the field of HRD, or that they preferred theory (with limited and controlled amounts of application).

Project as test of knowledge. There seemed to be general agreement that the project was a more meaningful test of conceptual knowledge than paper assignments or tests. Asked if they felt that they were in a better position to design training programs as a result of a "real life context", there appeared to be a strong belief in personal readiness to act as a designer. These findings are however subject to strong qualification. One student suggested that though the project had been designed to solve a real life problem, nevertheless it remained a "paradigm" or "framework", and thus still "academic" and "theoretical". This student was working at the time with a consultant who was "actually out there doing this" and who wouldn't "want to have anything to do with" the models being presented and tested. So, despite the apparent introduction of reality, there remained "two worlds" which could not be reconciled. At the same time, being real carried problems of its own: "because you're dealing with real life situations", noted the same student, "there's even more of a stress to make this perfect. . .and if you will, your name is on the line."

Though the conclusions must remain tentative, we were beginning to see emerge a set of ideas which suggested that while the introduction of "reality" to the formal learning environment could be motivating and compelling in its own right, it also brought dangers and anxieties. The fact, as it turned out, that I, the instructor--the "master" (Tripp, 1993)--was not there "for them" as much as I had presumed I was created an environment where the real world tended to overwhelm the learning. In retrospect, the need for safety and comfort, the need to practice where it won't be costly, seems to push learning towards the artificial where students are held responsible for a more limited set of actions, and become, in Lave's words, legitimate but peripheral participants.

Knowledge Sources. Students discussed the value of finding knowledge within themselves, though they were mostly new to this area of professional practice. At the same time, there were expressions of ambivalence about the place and status of (learning) theory and the need for more instructor input. At times, it appeared as if there was a clash between the concept of knowledge based on the motive of coming to class to acquire basics and the idea that the instructor was not or was not allowing himself to be portrayed as the sole source of expertise and wisdom. In other words, if you came to class for "the basics" then of course you couldn't be presumed to know these and the instructor, who does, must be the expert. If, on the other hand, you permitted the instructor to push you towards the knowledge and expertise he believed you already had, you experienced the thrill of knowing you knew while being disappointed that perhaps you had the basics all along and thus knowledge was not the elusive entity the motive for taking the class seemed to rest on.

In conclusion, again though very tentative, the manoeuvering around classroom tasks and assignments is only partly about involving the student in his or her own learning, only partly about activity and action. It is also singularly about where you believe fundamentally knowledge comes from and what it means to "have" and be able to "use" that knowledge. The idea that it comes from within carries hints of the Platonic embrace of memory as the source of knowledge, already strongly implicit in the concept of experiential learning. Situated learning seems to push away from this locus, even as adult learning theory pushes it away from the instructor. Where then does knowledge or learning reside, if not in the environment? The answer seems to be none of these and all of these. Though there is no data from this study to support this line of reasoning, it echoes recent discussions of ID in the context of situated learning (Young, 1995):

> From this view [that of situated learning], remembering arises through interactions with the environment, and the concept of memory becomes non-existent or irrelevant to an explanation of knowledge and learning, replaced by an emphasis of the tuning of attention and perception; that is, perceptual learning. (p.44)

Motivation. A burgeoning literature on classroom learning has shifted attention from the merely cognitive dimensions of knowledge acquisition to so-called "hot" dimensions such as motivation, values, interests, self-efficacy, control and the like (Pintrich, Marx, & Boyle, 1993; Courtney & Speck, 1994). I was particularly interested in how this experiment in situated learning affected student motivation and how the latter in turn seemed to effect learning. Students reported a patterned array of highs and lows (though we inadvertently biased responses through our question: "How motivated were you in this class?" followed by "Have their been motivational highs and lows?"). Highs were associated with getting started on the project, putting it together or seeing how it was coming together, a sense of completion, things clicking, applying class readings to parts of the project, and the like. Lows were mostly associated with group work: conflicts within the group, the issue of compromising on ideas and solutions, the pressure of completing the project within a pre-set time, along with the fact that the project had to be presented to a real client.

In retrospect, I was less in touch with the groups and their frustrations and anxieties than I might have been. For example, in the Engineering group, it soon became apparent that the leader-facilitator--who was also the client--brought an unfortunate mix to his work. He already had his own solution to the problem and so was reluctant to accept the group's decision. More importantly, perhaps, he was--from my observations--amazingly passive as a participant, and never really functioned as a facilitator. Though his normal job is that of supervisor in a unit of engineering technicians, in this context, he seemed very unwilling or unable to lead. The fact that the class group was made up entirely of women, while his work group is exclusively male probably may have had something to do with his style of leadership, though the unfolding of this issue was not dealt with in the interviews. The result for one member of the group was plainly disturbing. She reported how

a funny thing happened, part of the group had met on their own and kind of changed the track of the group, so I happened to run into them at the library while they were working on something and I kind of sat down and made myself at home. But it was frustrating for me because if I wouldn't have been there at that time, I would have missed out on that part.

In this particular context, the situating of the learning depended on there being groups. At the same time, various theories strongly imply their importance because of their ability to provide

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multiple perspectives, because they represent the community of practice, and so forth. However, in this instance, it seems clear that a kind of quasi-tyranny took over, with some members, particularly as deadlines loomed, determined to push decisions through quite undemocratically and in some cases to physically exclude members who were perceived as contributing to the final outcome.

Primary complaints. As might be expected major complaints by class members had to do with the "considerable" time needed outside of the class in order to complete the projects. Compounding this, my decision, which I thought I had discussed adequately with the class, to shift the deadline when a preliminary report of the project was due seemed to cause more confusion and stress. Group members were geared towards particular deadlines, no matter how unrealistic--which they were. Though evidence is not strong here, it is possible that by shifting the deadlines I was reminding them of the importance of real life parameters to the project, at a time when they would have been willing to accept that the project ultimately was not going to make or break them, and that, this, after all, was still a class, and not real life.

Some Conclusions

The current situation contains room for both danger as well as excitement. We appear to be sitting at a time when the jury is out on the practicality of situated learning as a philosophy of pedagogy even as the theoretical literature is unequivocal in its embrace of the concept. Children and workers learn most effectively the practical knowledge they desire and need in contexts of use (Brown, Collins & Duguid, 1989). Learners learn in communities of practice (Lave & Wenger, 1991). Schooling is not merely suspect (Resnick, 1987) but probably irrelevant, if not wrong (Balfanz, 1991; Lave & Wenger, 1991). Given that schools, colleges and the like are not going to go away soon, how then are the institutions of learning to change to accommodate the new realities? Suchman, Brown, Streibel and others have been strong on the critique and the careful enunciation of theory. What is the solution? Lave more or less dismisses the school as at best a distraction from the focus on communities of practice. Others have attempted to salvage the classroom while criticizing the opposition for being vague or utopian on practicalities (Tripp, 1993). But if the critique by Suchman et al. is to matter, then there can be no denying that situated learning and situated actions are concepts which contain quite radical implications for classroom practices. It is not simply that lectures do not help the learner because they are too dull and s/he is too passive in their presence. The notion of learning as a process and product of community practice turns notions of transfer and application on their heads, and have much less to do with the brilliance of the instructor.

In this study, I attempted to bridge the gap between the formality of the classroom learning environment and the authenticity of real life problem-solving and decision-making. In trying to make the artificial authentic, it seems to me that my students were overwhelmed by the real world in a way which complicated learning even while they acquired pockets of information. In some cases, it seemed to be more "lessons" they were learning about life itself than it was the results of reflection and theory-building about the subject of ID. But did they need to go to the university to continue the bumping up against a reality which characterizes their daily lives as adults? Does academic learning and knowledge serve to make their lives and jobs harder precisely because it is formal and abstracted from the real world or is it that very abstraction and removal which is the sought-after respite from a world too overwhelming in its nowness and thereness, a world from which we ought to be able to get away in constructive forms of play, one form of which is academia and its solitude of knowing?

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A MODEL FOR DEVELOPING FOREIGN LANGUAGE HRD PROGRAMS

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Using a four decision-point scheme based on the curriculum theory of Houle (1976) as a data analysis instrument, the authors studied over 30 successful foreign language programs in business, government and education. Their analysis resulted in a model for corporate foreign language programs.

The rapid growth of international trade in the last fifteen years has resulted in a renewed interest among U.S. multinational firms in developing foreign language capabilities of their employees. According to Inman (1985), U.S. companies have traditionally contracted with commercial language schools (46.3%), private individuals (14%), academic establishments (7.4%) or implemented their own in-house training programs (12.3%). However, the hours devoted to language training in these latter programs averaged 108.5 hours (Inman, 1985) or less (Seabrook and Valdes, 1988); whereas successful programs with long histories and considerable research support include many more contact hours (Beneke, 1981; Nolan, Grynspan & Kline, 1984).

In spite of these programs, American firms continue to experience a 25-40% expatriate failure rate, compared to a failure rate of only 10% for Japanese expatriates (Hogan & Goodson, 1990). Harry Obst, Director of the Department of State's Office of Language Services, is quoted as saying, "...the American ignorance of foreign languages and cultures is costing the U.S. over $50 billion a year (Wolniansky, 1989)."

In sharp contrast, Japanese firms invested much more time and massive sums of money for in-house language training (Holden, 1989; Horton, 1987). Like the Japanese, European firms such as Siemens AG and BASF AG Chemical Corporation have made a serious commitment to language instruction, providing 144 to 400 hours of in-house instruction (Basta, 1991; Monahan, 1989; Freudenstein, Beneke & Ponisch, 1981). These findings suggest that proactive and committed in-house programs are more effective than reactive, short-term contract solutions to training.

This paper proposes a model for developing effective foreign language training programs within the business and industrial settings. The model is based on an extensive review of the literature describing current language training programs within business, academia and the government sectors. By identifying elements common to programs known to be successful, and by selecting and generalizing curriculum innovations from successful programs, the authors have developed what they hope is a useful model for designers of foreign language training programs in multinational firms. in the host country.

Methodology

Houle (1976) devised a curriculum development model based on various decision points from the identification of an educational activity to the "measurement and appraisal of results (Houle, 1976 p. 54)." Although Houle's complete model includes both major and subordinate "decision points," the authors of this paper were concerned only with the following decision points:

1. The identification of a learning/training need
2. The setting of goals and objectives
3. Program design including methods of instruction
4. The evaluating or assessing of training outcomes

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The analytic paradigm described above was utilized to gather data from various successful programs described in the literature. In addition to reviewing exemplary cases described in the literature, the authors conducted field observations in the U.S., France and Central America. Both empirical cases and those found in the literature were selected from the three different settings of business, university and government agencies.

Results of the Study

The identification of a learning/training need. The most sophisticated examples of needs analysis among in-house training programs were found in Europe. Clearly, the ultimate goal among these companies was to benefit the organization. On-site training programs, even without permanent staff assigned as language trainers, were able to form teams of managers and, when available, expatriate employees to conduct thorough needs analyses. Often, the best data for guiding the design of a training program was judged to be obtainable only from those who had experienced working abroad, especially from those who had failed in their assignments in the sense of having to return early. Particularly successful were programs such as one conducted by Credit Lyonnais which had a full-time language expert as part of the company team, an individual who also had a deep knowledge of the corporate culture and had immediate access to changing information related to company, job and trainee language needs (Finel-Honigman, 1986).

Ford-Werke used a three-level needs analysis. Conducted by in-house experts, the analysis included 1) needs identified as company-wide, related to overall goals of the firm and related to specific corporate culture; 2) department and job specific language needs; and 3) employee language needs. From these three levels of needs, Ford-Werke formulated performance objectives for each employee (Thelen and Reinhold, 1981). The Association for the Exchange of Experiences on Foreign Language Teaching in Industrial Firms (ERFA or Erfahrungsaustauschring Fremdsprachen in der Wirtschaft) identifies a fourth level--the needs of the trainee's family (Ponisch, 1981). ERFA companies then provided whatever training they considered necessary for family members. Biersteker (1986) suggests the use of the ACTFL oral interview as an instrument that might be used in assessing individual employee needs.

If European exemplars such as the ERFA group and Credit Lyonnais could be considered at one end of a continuum, academic programs, even the most exemplary, should be considered at the opposite end of the needs analysis continuum. Although academic programs such as the Languages for International Professions Program (LIPP) at Arizona State University conducted extensive needs assessment surveys, these surveys often resulted in general lists of business needs gathered from a variety of professionals employed in different organizations (Guntermann, 1984a). This inventory of functions, knowledge and attitudes effectively served the purposes of an academic program designed to prepare students for a variety of possible occupational settings, but the LIPP approach may not provide the most appropriate information on training needs for a specific company. Academia's unfamiliarity with a particular corporate culture and specific job requirements together with its physical isolation from business settings set this approach to needs analysis at the opposite end of the continuum.

The setting of training goals and objectives. Training program goals and objectives were determined in all of the exemplary cases by means of thorough and detailed needs analyses. Each identified need was matched with a set of specific learning outcomes. Obviously, those programs which had conducted extensive needs analyses were better able to identify clear learning outcomes. The ERFA group responded to a survey identifying program goals and objectives. ERFA described the general goal as the development of language performance and behavior competencies appropriate for a variety of professional and social situations (Beneke, 1981). The LIPP at Arizona State formulated its goal as the development of communicative proficiency within social and professional functions and contexts. The Foreign Service Institute defined its general goal as "functional effectiveness as well as linguistic correctness (Crawford, 1983, p. 3)." ERFA identified specific objectives within the linguistic framework of understanding, speaking, reading and writing. They combined this linguistic framework with priorities emerging from specific task analyses geared to individual job requirements. Using the example of marketing personnel, ERFA placed top priority on speaking skills, specifically the ability to communicate orally with secretarial staff and top management; next they placed the ability to write to secretarial staff and the engineering staff; and finally, the ability to read and comprehend materials from top management. Combined with these very specific skills involving a narrow set of technical vocabulary, ERFA identified as an outcome the ability to negotiate while maintaining a positive and productive attitude (Beneke, 1981).

In most programs a distinction was made between general language objectives and technical language objectives, a distinction based on the results of task analyses and word frequency counts. Surprisingly, in all programs including those of ERFA companies, general language was considered more important than technical. Although technical language is important, it is considered easier to learn once general language is mastered. Inman (1978) found that technical language constituted only 21% of the language used on the job when analyzed linguistically. Other research done in this area indicates that the percentage of technical language varies from job to job. Technical language is more important for engineers than for managers. Some linguists voice an opposing view, however. Dany (1985) recommends using some technical language in the initial stages of language training to motivate the trainees. Coutts (1974) rejected the idea that specialized language could not be taught before general language was mastered. Her training model for airline personnel included technical language at the very beginning stages of training.

Communicative competence as a general goal includes in all cases appropriate cultural behaviors in addition to linguistic competencies. Biersteker's (1986) testing model for business needs evaluates cultural as well as linguistic behaviors. Cere (1986) provided a list of culture-related competencies that could serve as a separate cultural component of a training program. These competencies include:

1) Self-awareness, a professional's awareness of his/her own behavior and attitudes.
2) Cross-cultural understanding, a professional's understanding of the similarities and differences between cultures.
3) History/traditions, one's knowledge of the socio-economic, political and historical development of the country.
4) Counterpart orientation, knowledge of the host country's culture surrounding the given profession or job.
5) Coping strategies, a repertoire of coping skills to assure a positive experience by the trainee in the host country.

Interestingly the above description of non-linguistic training given by Cere (1986) is similar to the Peace Corps Core Curriculum for preparing volunteers to work in host countries. The elements listed above, of course, refer to training that goes beyond the language classroom.

Program Design: Selection of Materials. A common complaint among all program descriptions was a shortage of appropriate materials for business language programs. Most programs relied on a combination of commercial instructional materials and teacher-prepared materials. Business materials had to be up-to-date, hence, almost by definition, needed to be customized. Instructors in the Arizona State LIPP program wrote all their own materials (Gunterman, 1984a). In-house trainers have the advantage of having ready access to technical content materials related directly to the needs of the trainee's job and to the needs of the company.

The selection of materials requires the same distinctions mentioned previously between general and technical language. In the case of the Costa Rican Bankers' Association, instructional materials addressing technical aspects of banking in Costa Rica were prepared by the instructors on the basis of interviews with each banker as well as observations of the bankers at work. Hence technical language was taught using teacher made materials, while general business language such as introductions, telephone transactions, negotiating insurance coverage or the rental of an office, travel transactions and bank exchanges might be available in commercially produced LSP materials. The language program designed for the Costa Rican Bankers' Association, for example, employed among its instructional materials the paperback version of *English for Banking and Finance* (Stillman & Gordon, 1983). This commercial text covered general banking topics such as savings accounts, checking accounts, loans, investments, electronic banking and automatic teller machines. Selective use of commercial materials can save time without compromising the customized approach of in-house programs. Finally, ERFA trainers argued for the use of learning modules to teach technical language. Modules can be modified without changing the design of the entire program. Modules can be built around annual reports, technical reports, office forms, business letters, magazines and newspapers. Dropping a module from a training program or rewriting modules to fit recent changes in procedures or technology allows the trainer to make changes without extensive program revision (Worth & Marshall, 1981).

Program Design: Selection of Training Methods. Before addressing teaching methods, a profile of the trainer or training staff requires some discussion. Almost all the in-house programs reviewed used a combination of trained linguists and native speakers of the target language. Deveny (1986) used native speakers recruited from the university to provide international students the opportunity to learn technical language in computer science. Nolan, Grynspan and Klein (1984) brought six graduate students to San Jose Costa Rica from the U.S. to use as trainers for banking professionals under the direction of an expert in TESOL. An in-house training program, as case studies indicate, requires at least one individual trained in the areas of linguistics, program development and the business operations of the company. In the case of the Costa Rican Bankers Association (Nolan, Grynspan and Klein, 1984), knowledge of the business operations of the companies was provided by the Executive Secretary of the Costa Rican Bankers' Association and the President of the Banco de Costa Rica, both of whom reviewed and approved the training design and the instructional materials. Having the experts in language and program development different from the experts in the corporate culture of the banks was a disadvantage. Rippert-Davila (1985) puts it nicely when he observes that the language instructor must have expertise that spans three cultures--home country, host country and corporate. The ERFA group recommends a full-time linguist who is also trained in adult teaching methods and program development and administration (Freudenstein, 1981). The setting of the training should be somewhat informal and comfortable. The ideal setting for a language training program would be a home-like room with comfortable chairs together with appropriate instructional aids such as overhead, video recorder, monitor, audio tape player, flip chart, white board, maps and dictionaries.

Few aspects of teaching methodology have been debated as much as the time of training. And, in no other learning task is there such a direct relationship between practice time and proficiency. However, among cases studied programs varied in length from a 40 to 400 contact hours. Programs also varied from full time to part time. Some European programs, for example, met 90 minutes per week for 30 weeks. Others met full time for two weeks and still others, half-time for 20 weeks. The Foreign Service Institute typically trains their ambassadorial and consular staff for 16 weeks in a full-time, intensive setting, depending on the target language. Peace Corps devotes from 180 to 240 hours of intensive language training, typically in a twelve week format. However, the Peace Corps method really includes considerably more contact hours, since Peace Corps training is conducted in the countries of destination where trainees benefit from total immersion every waking hour of the day.

Two distinct types of programs were identified in both the literature and the field studies---intensive and extensive. Shallis (1979) reported that a third of the institutions she studied preferred a combination of intensive and extensive programs. Campbell, Hallman, and Geroy, (1988) surveyed international companies in Florida regarding their practices in this regard. Sixty-seven percent (67%) had no preference for program length. Gill (cited in Shallis, 1979) showed that an operational level in a foreign language takes 500 hours extensively (three years at four hours a week) 400 hours intensively (six to seven hours per day), and 250-300 hours by immersion (50 hours a week).

Based on the programs reviewed in this study, 250 hours of classroom instruction seem to make up the minimum time frame necessary to achieve the outcomes of the trainee's being able to communicate at a basic level in a variety of social and professional situations. A Foreign Service Institute rating of FSI 1 (elementary proficiency), which is equivalent to the Intermediate level on the ACTFL scale requires approximately 240 hours of instruction according to Guntermann (1984a). In Europe, at least 270 hours of instruction are considered necessary to reach "threshold level," the minimum level of language competence for survival in a foreign country (Dannerbeck, 1987, p. 418).

The Evaluating or Assessing of Training Outcomes: Evaluation of foreign language training programs was conducted on three levels. First, perhaps most immediate and tangible, is the evaluation of trainee learning and performance during and after training; second, the quality of the training itself, and finally, the evaluation of the effectiveness of the overall program to justify training expenditures to the company's or agency's fiscal unit.

Evaluating trainee performance takes two basic forms, use of standardized pencil and paper tests and use of oral observations and interviews. The interviews are standardized insofar as they employ a standard set of questions and stated criteria for assessment. On the other hand, even standardized interviews cannot be considered objective, since they require individual interpretation and judgment. Some European programs used objective testing including written tests and multiple choice tests covering vocabulary, grammar, cultural information, reading and listening comprehension (Freudenstein, 1981). They also use observations of role-play, evaluations of written composition and letter writing, as well as the interview. It was observed that European and Japanese companies had more comprehensive approaches to evaluation than did U.S. companies. In the United States there is a growing trend to use standardized, proficiency-based evaluation methods of foreign language skills (Buck and Hiple, 1984). Proficiency guidelines and ratings have been developed by government agencies as well as by the American Council for the Teaching of Foreign Languages (ACTFL).

Besides linguistic performance, evaluation of trainees also included an assessment of culturally appropriate behaviors. Often, this type of evaluation was qualitative in nature, occasionally, quantitative when reduced to pencil and paper instruments. In assessing, both language and culturally appropriate behavior most programs have abandoned achievement testing in favor of proficiency testing. Proficiency testing focuses on the "functional use of the totality of the language compared to that of an educated native speaker" (Buck & Hiple, 1984, p. 525). This is basically the approach of government institutions such as the Foreign Service Institute, the CIA, the Peace Corps, and the Defense Language Institute all of which used scales developed by the Interagency Language Roundtable which are commonly referred to as FSI scales. In this approach a face-to-face oral interview conducted by a native-speaker is used to determine the point of "...linguistic breakdown, the level at which the candidate can no longer maintain linguistically accurate and culturally appropriate performance (p. 527)." Another proficiency testing instrument is the Biersteker (1986) interview format which can be used to predict communicative competence in specific situations. This evaluation instrument consists of a cultural skills area and a language skills area. The instrument evaluates trainees in each area according to their production and understanding of the target language and their social interaction with native speakers.

However sophisticated the above approaches may be, such assessments are inferential when compared to on-the-job performance (Crawford, 1983). Unfortunately, language trainers rarely have the opportunity to observe subsequent on-the-job performance of trainees. It is recommended that in-house programs afford trainers the opportunity for follow-up observations of trainees on the job in the interests of better program evaluation.

Conclusions: the Model

The model devised by the researchers can best be summarized by addressing a series of subordinate decision points grouped according to the Houle's model as adapted by the researchers.

Needs Analysis

Company Needs: Questions to be asked by the linguist/trainer and directed to upper management:

1. What are company long-range language-related goals?
2. What are immediate language-related problems?
3. Can language training help solve these problems or should other solutions be found?
4. What is the company's commitment to training?
5. What is the time frame for training?
6. What resources are available for training?
7. What are company expectations of the training effort?

Job or Task Needs: Questions to be asked by linguist/trainer and directed to returned expatriates, middle management and technical experts:

1. What are the specific language-related skills, knowledge, attitudes and behaviors necessary to perform this job?
2. What type of language (general or technical) is necessary to perform this job?
3. What language skill (listening comprehension, speaking, reading, writing) is most important?
4. What level of proficiency is required?
5. What are the most common situations (social and professional) involved in this job?
6. What are the culture-related skills, knowledge, attitudes, and behaviors necessary to perform this job?

Trainee Needs: Questions to be asked by the linguist/trainer and answered by the trainee:

1. What is the trainee's learning biography?
2. What is the trainee's past language experience?
3. What personality traits does the trainee have that help or hinder language learning?
4. What is the strength of the trainee's motivation to learn?
5. What physical limitations does the trainee have that might affect learning?

Program Design:

Goals and Objectives Areas to be considered by the linguist/trainer include:

1. General goal of the training program and overall time frame.
2. Specific objectives directly related to the needs analysis. These objectives will be expressed in behavioral or performance terms. For example, by week 12 the trainee will be able to give a 15 minute demonstration of our primary product to a group of potential clients using appropriate vocabulary, grammatical structures with culturally appropriate gestures and culturally appropriate references.
3. Specific objectives should include time frames.
4. Specific objectives should adhere to inventories of social situations with accompanying vocabulary, structures, and cultural information as well as professional or job-related situations.

Program Design: Materials Selection: Materials should include:

1. Social situation modules prepared by the linguist/trainer
2. Job specific modules prepared by the linguist/trainer
3. A grammar text which could be a commercially available item
4. Exercises and drills based on modules prepared by the linguist/trainer.
5. Magazines, newspapers, professional journals, annual reports, and other literature pertaining to company goals or local culture.

6. Audio visual materials including video tapes and over-head transparencies.
7. Computer assisted exercises if available
8. Commercially available foreign language for specific purposes texts, if available.

Program Design: Methods: The methods identified in this study include the selection of instructor, choice of specific instructional method and setting, and the scheduling of learning activities.

Instructor should demonstrate:

1. expertise in linguistics and be either a native speaker or demonstrate a target language proficiency at FSI Level 4.5.
2. expertise in foreign language teaching methodologies and even in adult education methodologies.
3. should have expertise both in the culture of the target country and the culture of the company.

Time Frames should be at least 250 hours of instruction for an Indo-European language with any of several combinations of extensive or intensive scheduling. More time would be needed for non Indo-European languages

Evaluation techniques

1. Trainee evaluation through oral interviews interpreted according to agreed-upon criteria
2. Objective testing of the trainee for specific skills and knowledge
3. Observation of trainee's performance in role play or on the job
4. Observation of trainer's performance in the classroom
5. Evaluation of the trainer done by the trainees
6. Evaluation of the program to determine whether goals and objectives were attained.
7. Evaluation of the program to determine cost-effectiveness.

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Performance Technology--
Isn't It Time We Found Some New Models?

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HRD professionals and performance technologists have been well-served by several classic models for separating training from nontraining needs and for identifying the appropriate performance improvement intervention to address a human performance problem. However, even classic models have their faults and become outdated. In this article the author briefly reviews two classic models, makes some personal observations about their possible strengths and weaknesses, describes the newly-released criteria of the so-called High Performance Workplace (HPW) identified by the U. S. Department of Labor, and poses questions for reader consideration about the possible need for new models to guide HRD professionals and performance technologists in choosing appropriate performance improvement strategies to anticipate or solve human performance problems.

It is always fun--and occasionally useful--to play the role of devil's advocate. Allow me to adopt that role in this paper for a simple, harmless but high-minded purpose: let's set out on the road to discovery to determine whether we might be in need of a new model (or even new models) to guide human performance interventions. If the classic models still work well enough, that is good to know. But there may be new ways to look at these issues that may help us more if we could break out of old paradigms.

Let me state at the outset that my aim here is not to diminish in the slightest the fine work done by the greats in the field. To paraphrase Isaac Newton, "we stand on the shoulders of giants"; and, to paraphrase T. S. Eliot, "great authors are never irrelevant and are always worth reading precisely because *they are what we know*." In short, we could not have an informed discussion about reinventing models to guide human performance technology were it not for the fine work done by many inventive people in many disciplines.

My plan here is a modest one, befitting the limited space I have. First, I will *briefly* describe two classic models that have been used to guide human performance improvement interventions. (That section will be very short because I will assume that most of my readers are familiar with these models.) Second, I will make some observations about what I consider to be their possible strengths and weaknesses. Third, I will describe the criteria for the so-called High Performance Workplace (HPW) recently identified by the U. S. Department of Labor. Fourth and finally, I will pose some questions for reader consideration about the *possible* need for new models to guide human performance improvement that are attuned to the HPW. I hope that this paper may stimulate true debate--and perhaps even lead to some ideas about new models to guide performance technology.

Classic Models

Two classic models have long dominated the landscape of human performance technology. One is Thomas Gilbert's (1978) *Behavior Engineering Model*; the other is Mager and Pipe's (1970) *Performance Analysis Model*. Of course, much has been written about human performance technology models in recent years.

Gilbert's Behavior Engineering Model. Perhaps best thought of as a comprehensive model that can be used to do an analysis of the performance landscape for an entire organization (Rothwell & Sredl, 1992), Gilbert's model lists six key vantage points for organizational analysis:

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Chart 1: Gilbert's Vantage Points for Analyzing Performance	
Vantage Point	**Key Questions for Consideration**
The philosophical level	What are the ideals of the organization?
The cultural level	What is the larger culture in which the organization functions?
The policy level	What missions define the organization?
The strategic level	What plans are designed to help the organization achieve its mission(s)?
The tactical level	What duties have been defined to help achieve strategies?
The logistical level	What support systems (including resources, information, etc.) have been established to help employees carry out their duties?

Gilbert's central contention is that, to achieve desired *accomplishments* (what some might call *work outcomes* or *work outputs*), an organization must achieve congruence at each level. Necessary support systems and other systems must be in place that will ensure that desired results can be achieved.

A key advantage of Gilbert's model is that it implicitly acknowledges the importance played by the work environment in establishing the basis for exemplary performance. In short, individual workers--while they can be a source of performance problems--can never achieve high performance when the organizational environment creates a barrier to performance. (This is a line of thinking with which quality guru W. Edwards Deming would strongly concur.)

For Gilbert, one key to improving individual performance is to examine what he calls performance improvement potential (PIP). That is measured by comparing the accomplishments of exemplary performers to the accomplishments of all other performers to determine the real-world possibilities for performance improvement. That measure can be powerfully persuasive to skeptical decision-makers.

Mager and Pipe's (1970) Performance Analysis Model. Long a favorite of many HRD professionals, Mager and Pipe's performance analysis model is properly viewed as a situation-specific model (Rothwell & Kazanas, 1992; Rothwell & Sredl, 1992). It can help troubleshoot performance problems in specific situations when decision-makers plead for help or when HRD professionals encounter performance problems.

The starting point for Mager and Pipe's flowchart model is a description of a performance discrepancy, a difference between *what is* and *what should be*. From that point the user of the model is guided through a series of steps to troubleshoot the nature of the problem, its underlying cause, and appropriate solutions. Key to using the model is distinguishing between a skill deficiency (which may lend itself to a training solution) and another (management) deficiency (which lends itself to a nontraining solution).

Mager and Pipe's model is marvelously useful. It steps the user through such possible questions (under yes, it is a skill deficiency) as: (1) "is the performer used to doing it?" (2) "is the skill used often?" It also steps the user through such alternative questions (under no, it is not a skill deficiency) as: (1) "is performance punishing?" (2) "is nonperformance rewarding?" (3) "does performance matter"; and (4) "are there obstacles to performance?"

Strengths and Weaknesses of the Classic Models

Both Gilbert's model and Mager and Pipe's model have real value in addressing workplace problems. (Some organizations have realized gains just by training their supervisors or employees on how to apply these models.) However, both models have some real strengths and weaknesses.

Gilbert's model properly examines the organizational environment against a backdrop of myriad influences. Mager and Pipe's model provides a powerful and inherently practical tool for trainers, performance technologists or even line managers and employees who encounter a performance problem.

Gilbert's model, however, is exceptionally difficult to explain to people--at least I have found that to be true. Moreover, it provides few clues--without supplementing it with other models from Gilbert--on precisely how to solve performance problems, identifying when it is possible to derive an appropriate combination of appropriate performance improvement interventions to address a vexing performance problem identified on several levels. Gilbert's reliance on the performance level of the exemplary performer, while quite useful when persuading skeptical managers about the possibilities for improvement, can implicitly limit the organization to "the best of what we currently do" rather than encourage "breakthrough thinking" that leads to quantum leaps in performance gains.

On the other hand, Mager and Pipe's model promotes--no doubt unintentionally and for the sake of the simplicity of the model-- the logical fallacy of *either/or thinking*. Performance technologists and other users are (unfortunately) led to conclude that any performance problem results from either a skill deficiency or a management deficiency. Never the twain shall meet? In real world settings, however, it is commonplace to find many problems that represent a *combination* of skill and management deficiencies. What then? How can the performance technologist use the model when it is both a skill deficiency and a management deficiency?

The U. S. Department of Labor's Criteria for HPW

The move to so-called high performance workplaces (HPW) has rightly prompted continuing attention to the factors affecting worker performance inherent in the work environment. According to the Department of Labor, the criteria for assessing a high performance workplace include the following, which may (arguably) imply a new model to guide human performance improvement interventions and human performance troubleshooting:

Chart 2: HIGH-PERFORMANCE WORKPLACE PRACTICES CRITERIA

I. **SKILLS AND INFORMATION**	I.1 *Training and Continuous Learning*	I.1.1 Investments in training and employee development reflect a higher proportion of payroll than competitors.
		I.1.2 There are programs to support continuous learning (e.g., job rotation and cross-functional team training).

		I.1.3a Training program effectiveness is measured.
		1.1.3b Training programs are effective.
	I.2 Information Sharing	I.2.1 All workers receive information on operating results, financial goals, and organizational performance.
		I.2.2 Employees are appropriately trained to apply information on the organization's operating results, financial goals, and its organizational performance
		I.2.3 There are multiple mechanisms by which internal communication occurs so that information flows up, down, and across the organization.
II. PARTICIPATION, ORGANIZATION, AND PARTNERSHIP	*II.1 Employee Participation*	II.1.1 Workers are actively involved in continuously improving their work rocess(es) and redefining their jobs.

		II.1.2 Workers can rapidly modify their work processes to correct quality, safety, or other problems.
		II.1.3 Workers are actively involved in problem-solving, selecting new technology, modifying the product or service provided, and meeting with customers.
		II.1.4 When individuals or teams make suggestions, they always receive feedback about their suggestions.
	II.2 Organization Structure	II.2.1 The organization has recently made one or more efforts to reduce layers of management.
		II.2.2 Most workers are organized into work teams with substantial autonomy.
		II.2.3 There are cross-functional teams or other mechanisms to share innovative ideas across organizational boundaries.

	II.3 *Worker-Management Partnerships*	II.3.1 Workers and their representatives are partners in decision making on a range of issues traditionally decided solely by managers (e.g., new technology, quality, and safety).
		II.3.2a If the organization is unionized, the union-management relationship has moved toward joint participation and decision making.
		II.3.2b If the organization is unionized, collective bargaining is based on interest-based techniques and cooperative problem solving.
		II.3.3 If the organization is unionized, the company and the union have engaged in innovative collective bargaining arrangements.
III. COMPENSATION, SECURITY AND WORK ENVIRONMENT	*III.1* *Compensation Linked to Performance and Skills*	III.1.1 The organization's incentive system incorporates new ways of rewarding workers.

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		III.1.2 Individual workers or work teams receive financial rewards when they improve the product, the work process, or make other improvements.
		III.1.3 Individual compensation is tied to both individual and corporate performance.
		III.1.4 Executive pay is tied to corporate (or business unit) performance.
	III.2 Employment Security	III.2.1 Comprehensive organization employment planning strategies and policies exist in order to minimize or avoid lay off of workers.
		III.2.2 If layoffs have occurred in recent years, the organization's actively helped laid-off workers find new jobs.

		III.2.3 The organization has a stated policy that workers will not suffer adverse effects from suggestions that result in productivity gains.
	III.3 Supportive Work Environment	III.3.1 The company attracts and retains a talented work force. (Issue to consider: Why do people leave?)
		III.3.2 There are policies and programs in place to encourage better employee morale and greater work-force commitments. (Issue to consider: What practices are in place to ensure that all problems with morale are promptly and systematically addressed?)
		III.3.3 Employees are actively involved in designing and implementing health and safety policies and programs.
		III.3.4 Accident rates in this organization are below the industry average.

		III.3.5 Family-supportive policies (e.g., flexible work schedules, child care, and/or elder-care) are in place.
		III.3.6 The organization actively hires, trains, retrains, and promotes a diverse work force.
IV. PUTTING IT ALL TOGETHER	*IV.1 The company fully integrates its human resource policies and workplace practices with other essential business strategies.*	
	IV.2 Quality and continuous improvement efforts are meshed with training, work organization, employee involvement, and alternative compensation programs.	
	IV.3a Workers are involved in the design and purchase of new technologies.	
	IV.3b Workers have the opportunity to regularly modify the technologies they use.	
	IV.3c Employees receive adequate training to use new technologies effectively.	

Source: *Road to high performance work organizations.* (1994). Washington, DC: U. S. Department of Labor, Office of the American Workplace. Not copyrighted.

Questions for Consideration

Consider the following questions:

- How enduring are the classic models that guide human performance technology? How applicable to the 1990s are they?

- In view of the growing number of performance improvement interventions listed in Stolovich and Keeps (1992), how well do the classic models of human performance technology help us to identify ***when*** to use different performance improvement interventions *alone or in combination*? How well do the models of Gilbert and Mager and Pipe address when to use large-scale performance improvement interventions or small-scale interventions?

- What modifications, if any, should be made to performance improvement models based on the implications of the high performance workplace criteria?

Conclusion

My aim in this paper has been to direct attention to the possible need to review classic models guiding Human Performance Technology with a view toward finding models that capture ways to match the most appropriate performance interventions with performance problems. The classic models, while they remain enduring and useful, may require review and consideration in the workplace of the 1990s. That accounts for the title of this paper: "Performance Technology--Isn't It Time We Found Some New Models?"

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Blocks to Improving Performance: Results of an Experientially-Based Group Exercise Using Gilbert's Behavior Engineering Model

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Training is often the performance improvement solution of choice. Yet, how often does the best training not yield performance improvement. There is a growing body of knowledge that indicates that many times performance improvement can be achieved faster, cheaper and better by altering factors in the workplace than by training. This paper addresses this issue, reporting on a study in which employees were asked to indicate what kind of interventions would best improve their performance.

It is the responsibility of HRD professionals to increase the "learning capacity of individuals, groups, collectives, and organizations through the development and application of learning-based interventions for the purpose of optimizing human and organizational growth and effectiveness" (Chalofsky, 1992, p. 179). Traditionally, this has been accomplished through training and training is on the rise. A survey by Lakewood Research projected that U.S. businesses would spend $50.6 billion for formal training this year, an increase of five percent from the 1993 total of $48.2 billion (1994). With these increased expenditures, however, organizations are increasingly concerned about the return on their training investment.

One of the factors that influences the degree to which training results in the desired individual and organization performance improvement is whether training was the appropriate intervention to improve performance to begin with. This factor can be addressed through a needs assessment. The problem is, needs assessments are seldom done (Dean, 1995a), despite the growing evidence that human and organizational growth and effectiveness can be improved by workplace interventions that consume less time and money than training. One source of this evidence is from employees themselves.

This paper reports the findings of a study that asked participants to identify the factor that, if improved, would contribute the most to the improvement of their work performance. The factors they had to choose from included the environmental factors of information, resources and incentives, or the individual factors of knowledge, capability or intrinsic motivation. Results indicate that the majority of participants perceive that improvement in environmental factors - not training - would contribute the most to their performance improvement. A discussion of implications of these results for the HRD profession concludes the paper.

Background and Purpose

In 1978, Thomas Gilbert wrote *Human Competence: Engineering Worthy Performance*. In this book, he described a series of techniques that could be used to "engineer" the improvement of employee performance from an average or below average level to an exemplary level. Included among these techniques was the Behavior Engineering Model (Figure 1) which focuses on fixing the environment in which the person works instead of placing the emphasis of performance improvement on fixing the person. With the Behavior Engineer Model, those individuals responsible for performance improvement and maintenance could diagnose for, prioritize and plan performance improvement solutions.

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The three cells along the top row of the model, information, resources, and incentives, represent factors of the work environment that influence performance. When these performance support factors are provided for, employees are empowered to perform at an exemplary level. But when the support factors are not provided; even with specialized training, performance cannot reach its potential.

It was Gilbert's contention that the absence of performance support factors in the work environment is, in fact, the single greatest block to exemplary performance. This is why, in identifying the solutions that will yield performance improvement; it is essential to begin by identifying any of the support factors in the work environment that might be missing. Gilbert believes that the majority of time, performance improvement can be achieved by addressing the environmental support factors alone, yet traditionally managers and human resource specialists assume that the individual, not the environment needs "fixing" and thus training is provided as the performance improvement solution of choice. When this assumption is wrong, several things occur.

- The performance doesn't improve to the degree that it is expected to, and as a result, the training, the trainer, those who planned the training and/or the employee are discredited.
- More money is spent on an ineffective solution, than would have been required to address most environment support factors.
- The disparity between the average and exemplary performance remains.

Of course there are many instances in which the appropriate performance improvement solution does involve the employee directly.

Figure 1 Behavior Engineering Model

Stimuli	**Response**	**Consequences**
Cell 1 - E **Information**	Cell 2 - E **Resources**	Cell 3 - E **Incentives**
• Descriptions of what is expected of performance • Clear and relevant guides on how to do the job • Relevant and frequent feedback on adequacy of performance	• Tools, resources, time and materials designed to achieve performance needs • Access to leaders • Sufficient personnel • Organized work processes	• Adequate financial incentives contingent upon performance • Non-monitory incentives • Career development opportunities • Clear consequences for poor performance
Cell 4 - I **Knowledge**	Cell 5 - I **Capacity**	Cell 6 - I **Motives**
• Systematically designed training to match requirements of exemplary performers • Opportunity for training	• Match between people and position • Good selection processes • Flexible scheduling to match peak capacity of workers • Prostheses or visual aids to augment capacity	• Recognition of worker's willingness to work for available incentives • Assessment of worker's motivation • Recruitment of workers to match realities of work conditions

E = Work Environment, I = Individual

Human Competence, 1978, p.88. Used with permission from T.F. Gilbert.

The bottom row of the Behavior Engineering Model represents factors related to the employee. The first, knowledge, comes into play when training is needed for: new job responsibilities, participation in cross-functional teams, using new equipment, and addressing gaps in knowledge and skills. In these instances, it is often not necessary to use the Behavior Engineering Model to identify the cause of performance deficiencies, because the need for training is self-evident.

The second cell on the bottom row of the Behavior Engineering Model, capacity, is the ability of the individual to perform the job. It is represented by a match or a mismatch between the employee and the job requirements. Here the effectiveness of the selection process is crucial.

It is Gilbert's contention that motivation, the third factor related to the individual, will be high if all of the other cells, especially those related to work environment, are provided for. Thus

It is Gilbert's contention that motivation, the third factor related to the individual, will be high if all of the other cells, especially those related to work environment, are provided for. Thus he believes that evidence of low motivation is a red flag to look for deficiencies in information, resources or incentives. In communicating this concept, the authors stress that factors in the work environment will not directly motivate employees, rather they can create an environment in which the employees' own intrinsic motivation can flourish.

Gilbert believes that any job that is supported in all six of the areas of the Behavior Engineering Model should "carry a guarantee of high competence, provided that management was structured so as to really deliver these things and had a clear focus on the mission of the job in the first place" (1978, p. 87).

Dean (1994) used Gilbert's Behavior Engineering Model as the basis for an experiential group exercise, "Where's My Biggest Performance Block?" Dean's exercise asks participants to identify one of Gilbert's six factors as the source of limitations to their own improved performance. In this paper, results from the exercise will demonstrate that participants, regardless of their role or level of responsibility, are more likely to identify environmental factors rather than individual factors as holding blocks to better performance.

A chi-square analysis of the data will demonstrate that these results are not accidental, but represent a real trend. In addition, the paper will include results from testing alternative models of the exercise which were developed to avoid the effects of primacy and recency and to explore the effect of the actor-observer bias.

Methodology

The exercise was entitled "Where's My Biggest Performance Block?" in order to convey the purpose of the exercise quickly and without an elaborate explanation that might prejudice responses. Participants in the "Where's My Biggest Performance Block?" exercise included managers, staff-level employees, members of professional societies and students in a graduate management program. Prior to the exercise, participants signed a form consenting to their involvement in this research.

In the exercise, participants are asked to respond to the question "Improvement in which one of the following six areas would enable you to do your job better?" by choosing one of the following six options. Each option relates to one of the factors in Gilbert's Behavior Engineering Model (expressed in parentheses):

1) Clear performance expectations and relevant feedback about the adequacy of your performance (Information)
2) Tools, resources and materials to achieve your performance goals (Resources)
3) Adequate pay and non-pay incentives made contingent upon your performance (Incentives)
4) Systematically designed training that matches the requirements of your job (Knowledge)
5) A match between your skills and the requirements of your job (Capacity)
6) Assurance of job security and social acceptance (Motivation)

For the exercise, a wall chart is positioned at the front of the room, visible to all participants. The wall chart depicts six cells numbered one through six with the first three cells stacked on top of cells four through six (see Figure 2). The wall chart thus resembles Gilbert's six-cell Behavior Engineering Model, but the cells are not labeled.

Figure 2 Wall Chart for Use with Activity

1	2	3
4	5	6

After selecting a response to the question, participants write the number corresponding to their response on a colored self-stick note. Participants then approach the wall chart and place their colored self-stick note in the cell corresponding to their selection. (Dean, 1994, p. 23-25)

After the participants place their responses on the wall chart, the exercise facilitator explains Gilbert's Behavior Engineering Model, and how each response to the exercise question (and each cell of the wall-chart model) relates to a factor influencing performance. The first three options – the top three cells of the model – represent factors in the performer's environment. Options four through six – the bottom three cells of the model – represent factors related to the performer's repertory.

The exercise facilitator asks the participants to comment on the results of the exercise as displayed on the wall chart. The clustering of the self-stick notes reveals whether most of the participants perceive environmental factors (notes clustered on top row) or individual factors (notes clustered on bottom row) as blocking better performance.

Manipulating the Exercise to Avoid Effects of Primacy and Recency Attendees of a teachers' conference participated in the "Where's My Biggest Performance Block?" exercise under slightly different circumstances than the other groups. In an attempt to avoid the influence of primacy and recency (Weiner, 1985) on participants' responses to the question, the order of the answers to the question were reversed. In addition, a color rather than a number was assigned to each answer. In response to the question, "Improvement in which one of the following six areas would enable you to do your job better?", participants could choose one of the following options:

- Assurance of job security and social acceptance (Yellow = motivation)
- A match between your skills and the requirements of your job (Blue = capacity)
- Systematically designed training that matches the requirements of your job (Red = knowledge)
- Adequate pay and non-pay incentives made contingent upon your performance (Green = incentives)
- Tools, resources and materials to achieve your performance goals (Purple = resources)
- Clear performance expectations and relevant feedback about the adequacy of your performance (Orange = information)

Therefore, the original first response became the last response, the second response became the fifth response, etc. Each participant selected a sticker which was the same color as the color corresponding to the answer selected, and then placed their stickers on the six-cell wall chart. Each cell of the wall chart was labeled by color, but the cells were labeled according to their original order. For example, the original first response (for the participants, the last response labeled "orange") was assigned to the first cell (see Figure 3).

Figure 3 Wall Chart for Use with Alternative Exercise

Orange	Purple	Green
Blue	Red	Yellow

Identifying Blocks to Better Performance in Others Attendees of the teachers conference participated in the exercise a second time. The answers to the exercise question were still reversed and color-coded; however, instead of examining the question from the viewpoint of their own performance, participants were asked to answer the question in terms of their students' performance. The question and answers were rewritten as follows: "Which one of the following six areas do your students need to improve their performance in the classroom?"

- Assurance of social acceptance and security in the classroom (Yellow = motives)
- A match between their skills and their grade level (Blue = capacity)
- Systematically designed instruction matching grade level requirements (Red = knowledge)
- Adequate incentives made contingent on their classroom performance (Green = incentives)

- Tools, resources and materials to achieve their classroom performance goals (Purple = resources)
- Clear expectations and relevant feedback about the adequacy of their classroom performance (Orange = information)

Results

Dean's "Where's My Biggest Performance Block?" experiential group exercise has been conducted with more than 850 participants over the past two years. Results show that, typically, over two-thirds of participants choose options one, two or three; the environmental factors of information, resources, or incentives – as the areas needing improvement in order to enable them to perform better.

To measure the results of the exercise for this paper, participants' responses for each cell were tallied. Percentages of total participants selecting each cell were also calculated. Also, the sum of percentages of the top three cells were compared to the sum of percentages of the bottom three cells to determine which set of factors – environmental or individual – were selected by the majority of participants.

Results were categorized according to the type of participant: staff-level employees, managers, members of professional societies, or graduate management students. Results were categorized in this manner in order to determine if participants with different roles (i.e., manager, employee or student) responded differently to the exercise. Results were also determined for the teachers' conference attendees, who participated in alternative models of the exercise. Additionally, for each category of participants, a chi-square analysis was performed. In the chi-square analysis, the actual results from the exercise were compared to theoretical results based on the null hypothesis that each cell of the model would receive an equal number of responses. If the results of the chi-square test of the observed responses and theoretical responses were greater than the critical value of x^2 at .05 level of significance and 5 degrees of freedom, then the null hypothesis was rejected.

Following are results according to the type of participant. For a graphic representation of percentages see Table 1.

Employees A total of 110 participants were staff-level employees. Of these employee participants, 39 percent selected cell one (information); 25 percent selected cell two (instruments); 18 percent selected cell three (incentives); eight percent selected cell four (knowledge); seven percent selected cell five (capacity), and three percent selected cell six (motives). Overall, 82 percent selected the environmental factors in cells one through three, and 18 percent selected the individual factors in cells four through six. Thus, more than two-thirds of the staff-level employee participants selected environmental factors. The chi-square analysis showed that x^2 equaled 91.13 and was greater than the critical value of x^2 of 11.070; therefore, for this category, the null hypothesis is rejected.

Managers Of a total of 48 managerial participants, 38 percent selected cell one (information); 27 percent selected cell two (instruments); two percent selected cell three (incentives); 19 percent selected cell four (knowledge); six percent selected cell five (capacity), and eight percent selected cell six (motives). Overall, 67 percent selected the environmental factors in cells one through three, and 33 percent selected the individual factors in cells four through six. Again, these results show a majority of participants selecting environmental factors as blocks to better performance. The chi-square analysis showed that x^2 equaled 64.33 and was greater than the critical value of x^2 of 11.070; therefore, for this category, the null hypothesis is rejected.

Employees and Managers A total of 409 participants were groups of staff-level employees and managers undergoing the exercise together. Of these participants, 29 percent selected cell one (information); 21 percent selected cell two (instruments); 29 percent selected cell three (incentives); 11 percent selected cell four (knowledge); seven percent selected cell five (capacity), and two percent selected cell six (motives). Overall, 80 percent selected the environmental factors in cells one through three, and 20 percent selected the individual factors in cells four through six. Thus, more than two-thirds of the staff-level employee and managerial participants undergoing the exercise together selected environmental factors. The chi-square analysis showed that x^2 equaled 180.58 and was greater than the critical value of x^2 of 11.070; therefore, for this category, the null hypothesis is rejected.

Attendees of Meetings of Professional Societies A total of 191 participants were attendees of meetings of professional societies. Of these participants, 40 percent selected cell one (information); 36 percent selected cell two (instruments); seven percent selected cell three (incentives); four percent selected cell four (knowledge); 10 percent selected cell five (capacity), and three percent selected cell six (motives). Overall, 83 percent selected the environmental factors in cells one through three, and 17 percent selected the individual factors in cells four through six. Thus, more than two-thirds of these participants selected environmental factors. The chi-square analysis showed that x^2 equaled 200.67 and was greater than the critical value of x^2 of 11.070; therefore, for this category, the null hypothesis is rejected.

Table 1 Results of Responses to "Where's My Biggest Performance Block?"

Nature of Groups	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6
Employees only	43 39%	27 25%	20 18%	9 8%	8 7%	3 3%
110 participants		*82%*			*18%*	
Managers only	18 38%	13 27%	1 2%	9 19%	3 6%	4 8%
48 participants		*67%*			*33%*	
Employees and managers	120 29%	87 21%	120 29%	46 11%	28 7%	8 2%
409 participants		*80%*			*20%*	
Attendants at professional meetings	76 40%	69 36%	14 7%	8 4%	19 10%	5 3%
191 participants		*83%*			17%	
Graduate students	12 30%	12 30%	4 10%	5 13%	3 8%	4 10%
40 participants		*70%*			*30%*	
Teachers responding regarding their own performance blocks *	22 37%	20 34%	1 2%	5 8%	4 7%	7 12%
59 participants		*73%*			*27%*	
Teachers responding to the performance blocks of their students *	13 22%	6 10%	5 9%	0 0%	3 5%	31 53%
58 participants		*41%*			*59%*	

* Experienced alternative model of the exercise

Cell 1: Information Cell 2: Resources Cell 3: Incentives	Environmental Factors
Cell 4: Knowledge Cell 5: Capacity Cell 6: Motives	Individual Factors

Graduate Management Students A total of 40 participants were graduate management students. Of these participants, 30 percent selected cell one (information); 30 percent selected cell two (instruments); 10 percent selected cell three (incentives); 13 percent selected cell four (knowledge); eight percent selected cell five (capacity), and 10 percent selected cell six (motives). Overall, 70 percent selected the environmental factors in cells one through three, and 30 percent selected the individual factors in cells four through six. Thus, more than two-thirds of the graduate student participants selected environmental factors. The chi-square analysis showed that x^2 equaled 13.1 and was greater than the critical value of x^2 of 11.070; therefore, for this category, the null hypothesis is rejected.

Manipulating the Exercise to Avoid Effects of Primacy and Recency The results from the group of teachers who responded to the alternative form of the exercise resembled results from participants who were given the original exercise. Of the 59 participants, 37 percent selected cell one (information); 34 percent selected cell two (instruments); two percent selected cell three (incentives); eight percent selected cell four (knowledge); seven percent selected cell five (capacity) and 12 percent selected cell six (motives). Overall, 73 percent selected the environmental factors in cells one through three, and 27 percent selected the individual factors in cells four through six. Even using an alternative model of the exercise, more than two-thirds of the participants selected environmental factors as the areas needing improvement in order for them to improve their own performance. The chi-square analysis showed that x^2 equaled 40.15 and was greater than the critical value of x^2 of 11.070; therefore, for this category, the null hypothesis is rejected.

Identifying Blocks to Better Performance in Others When answering this question in terms of their students and not themselves, the teachers' responses differed greatly. Of 58 participants, 22 percent selected cell one (information); 10 percent selected cell two (instruments); nine percent selected cell three (incentives); zero percent selected cell four (knowledge); five percent selected cell five (capacity) and 53 percent selected cell six (motives). Overall, 41 percent selected the environmental factors in cells one through three, and 59 percent selected the individual factors in cells four through six. Departing from the usual trend of the majority of responses favoring environmental factors; in this exercise, the majority of participants identified individual factors as limiting performance. The chi-square analysis showed that x^2 equaled 66.14 and was greater than the critical value of x^2 of 11.070; therefore, for this category, the null hypothesis is rejected.

Summary and Conclusions

For all categories of participants undergoing the original "Where's My Biggest Performance Block?" exercise, results consistently show that at least two-thirds select the environmental factors of information, resources and incentives as needing improvement in order to enable them to improve their own performance. Even when the exercise was changed to avoid the tendency of participants to select either the first or last response, results still favored environmental over individual factors. A chi-square analysis provided statistical support for the premise by demonstrating that these results are not accidental, but reflect an actual trend.

When the exercise was modified to elicit participants' responses about the performance of others, rather than themselves, however, the trend reversed (see Figure 4). A group of teachers which had identified environmental factors as limiting their own performance, largely identified individual factors as the ones blocking better performance from their students. These results may reflect the actor-observer bias as identified by Jones and Nisbett, who ". . . suggest that actors focus their attention upon the environment, but observers concentrate on the actors and their behavior." (Weiner 1980, p. 294) In this case, the teachers responded from the vantage point of actors when identifying their own performance blocks and as observers when identifying the blocks to the performance of their students.

Figure 4 Teachers' Perceptions of the Blocks to Their Own and Their Students' Performance

	Environmental Factors	**Individual Factors**
Teachers' perceptions of their own performance blocks	73%	27%
Teachers' perceptions of the performance blocks of their students	41%	59%

The results illustrated in Figure 4 may also be explained by attribution theory which proposes that "people tend to explain the causes of their own behavior, to themselves as well as to others, in a self-serving manner" (Nisbett and Ross, 1980, p. 231). Although the question "Improvement in which one of the following six areas would enable you to do your job better?" was positively worded, it implied that there is a need for improvement, that performance is not as high as it might be and that there is a problem that is inhibiting that high performance. Individuals may want to avoid attributing a performance problem to themselves and thus identify environmental areas as needing improvement. This phenomenon may have affected the teachers - along with the other participant groups - but may not have been a factor when the teachers were asked to identify the performance blocks of their students because of the actor-observor bias.

The actor-observer bias and attribution theory may further complicate the debate over which force – the environment or the individual – has greater influence on performance. Are environmental factors truly blocking better performance; and, if so, to what extent do they influence the effectiveness of training? Or, do people falsely identify environmental factors as blocks because they are naturally biased when examining themselves? These are questions that suggest opportunities for further research.

Rather than propose an answer to these questions, this paper demonstrates the importance of people's *perceptions*. Results of the exercise show that people clearly perceive environmental factors, rather than individual factors, as limiting their performance. We've seen this phenomenon in the training room as well where employees come to training believing that, despite how good the training is or how much they learn, very little will change once they return to the job - because of factors in the work place. Perceptions are powerful, and cannot be ignored. If people believe that the work environment limits their performance, then this belief must be addressed by human resource development professionals. If, instead, we focus on individual training and development, then we are not giving employees what they think they need, thus disincenting them. Nor are we addressing what may be the rea; blocks to exemplary performance.

The position of the authors is that, despite the potential influence of the actor-observor bias and attribution theory and the fact that we are dealing with perceptions, the fact that the so many participants so consistently identified environmental factors as needing improvement in order for them to do their jobs better validates Gilbert's premise the majority of time, performance improvement can be achieved by addressing the environmental support factors alone. At the very least, they must be addressed in conjunction with training.

Furhter, we believe that the "What's My Performance Block?" exercise is one way of demonstrating the importance of environmental support factors to decision makers who must be convinced of the value of a needs assessment or non-training performance improvement interventions. Feedback from participants in this ten minute exercise indicate that they not only grasped the concepts underlying the Behavior Engineering Model, but they "bought into" the concepts because they were supported by their own data.

These results of this study do not lessen the importance of training. In fact, training is more important than ever. Downsizing, job redesign and the new jobs that are being created as the result of technical and scientific advancement all require training. Additionally, performance improvement specialists are recognizing the importance of individual transformation which opens up entirely new arenas of training (Senge, 1992, Senge et al, 1994, Dean, 1995b). With the increased emphasis on and investment in training, it is more important than ever for the human resource development community to assure that the work environment will support the use of new skills and knowledge, if HRD is to fulfill its responsibility for optimizing human and organizational growth and effectiveness.

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Emerging Issues in the Reengineering of Corporate Performance Evaluation and Development

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This study identifies emerging issues and trends in the design and implementation of performance management (PM) systems in corporate environments. For purposes of the study, performance management is defined as any integrated system with the main purpose of managing, monitoring and improving employee performance. The study looks at both the existing body of literature and actual practices of two corporate organizations implementing a PM system. Issues are identified in three key areas: common performance management system elements, issues and barriers identified during design and implementation of PM, and strategies used to manage identified issues and barriers. Results showed emerging issues including an inconsistency of performance management elements in practice, variations in PM systems based on organizational factors, lack of involvement of personnel at all levels in PM system design, and more strategies required for team environments and integration of feedback systems. Recommendations for further research are made.

In recent years, a significant number of corporate organizations have moved from a performance appraisal process, historically organized and managed by a central Human Resources department, to a decentralized performance management (PM) system. Such a system attempts to effectively integrate strategic business objectives, appraisal, training and skill development, rewards and motivation into an ongoing program which is typically managed and administered by direct supervisors and managers and overseen by a Human Resources or performance/training department (Antonioni, 1994; Lawler, 1994; Bevan and Thompson, 1991). While a significant number of organizations have "jumped on the bandwagon" of a PM approach, there is limited information available to researchers or practitioners regarding issues inherent in designing and implementing an effective PM process. The authors maintain that much can be learned from the problems addressed and overcome by organizations which are currently employing a PM approach.

This study, therefore, addresses three main questions: What are the common elements in PM systems that are currently being designed and implemented in corporations? What issues and barriers have organizations identified during the design or implementation of their PM system? How have organizations successfully managed or overcome issues and barriers to designing or implementing PM?

Methods

Literature Analysis. A review and key word analysis of current literature in performance management was conducted. The authors chose ten articles that represented both theoretical and case-oriented works for keyword analysis. All articles represented theory and applications of performance management post-1987, with 90% of articles representing practices post-1991. Key word analysis was conducted by identifying distinguishing key words and phrases in each article as they applied to the three main research questions. Key words were then mapped for frequency of occurrence across the ten articles.

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Interviews. Telephone interviews were conducted, using an interview protocol, with a representative human resource or management contact at two corporations currently designing or implementing a performance management system. Both contacts were chosen based on the main selection criterion: that each is *directly* responsible for part or all of the design and implementation of the PM system. Interview questions, as with the literature analysis, centered on the key elements of the organization's PM system, barrier/issues experienced and strategies used to overcome the described barriers.

Results

Literature Analysis. Tables 1, 2 and 3 show the key words/phrases that emerged during analysis, and the frequency of occurrence across the ten articles.

Table 1. Key word Analysis: Common elements of Performance Management Systems

Keywords or phrase	*Number of Occurrences*	*(n/10)*
Goal Setting/Performance Targets	9	.90
Feedback Systems	9	.90
Formal individual performance review	9	.90
Link to business strategy/plan	8	.80
Formal performance planning	8	.80
Professional development	8	.80
Link to reward system	8	.80
Coaching	7	.70
Involvement of individual in process	7	.70
Performance-based pay	6	.60
Team performance reviews/ team-based pay	2	.20

Table 2. Key word Analysis: Issues/Barriers in the Design/ Implementation of Performance Management Systems

Keywords or phrase	*Number of Occurrences*	*(n/10)*
Lack of integration of PM processes	9	.90
Senior management attitudes/practices	8	.80
Communication	7	.70
Varying practices in implementing PM	7	.70
Linking PM with rewards/ compensation	7	.70
Employee attitudes	7	.70
Need to change corporate culture	6	.60
Level of coaching skills	5	.50
Building trust in the new system	5	.50

Table 3. Key word Analysis: Strategies Used to Address Barriers/Issues

Keywords or phrase	*Number of Occurrences*	*(n/10)*
Ensure development-driven integration	10	1.00
Emphasize feedback/coaching	9	.90
Involve individuals at all levels	8	.80
Emphasize shared responsibility of managers and individuals	7	.70
Train at all levels	6	.60
Communicate broadly	5	.50
Provide support and resources	5	.50

Interview with Organization A. Organization A is a large training division of a global organization. Approximately 600 employees are affected by the current performance management system. After about 18 months of needs analysis and design, the organization is in pilot implementation of a new system which replaced a traditional bi-annual performance appraisal. The new system was established in response to an internal employee satisfaction survey which was part of a Total Quality Management initiative. The survey revealed, among other areas, a need for strengthening feedback and the quality of supervision. A senior member of management who has been involved during design and implementation of the system was interviewed.

Elements of the Current Performance Management System. The new PM system is a development-driven system centered on a cyclical process which begins with the manager and individual working together to set initial performance expectations. During the initial meeting, personal goals and the organization's goals and strategies are discussed, as are criteria/measures for assessing performance outcomes and professional development plans. Performance and professional development are then reviewed through at least two scheduled feedback sessions, a formal mid-year progress check and formal annual performance review. Ongoing coaching and feedback are also emphasized. At present, the organization is retaining a merit-pay system, but is evaluating stronger links between the performance management and the compensation/promotion systems.

Expressed goals of the system include:

- Ensure the products and services of each workgroup in the organization align with the expressed goals of the division and global organization.
- Identify the competencies required of individuals who deliver the products and services.
- Identify individual training and non-training options/strategies to support the development of competencies.
- Assess performance as input to development, promotion and salary administration.
- Provide for career management and progression through establishment and monitoring of professional development plans.

Barriers/issues. (1) Consistency Across Workgroups. Although the new system has garnered mostly positive reaction at all levels during pilot implementation, a few challenges have presented themselves throughout the design and implementation of the new PM system. During design, the greatest challenge was to design a system that would work across all job types and positions within the division. There was a goal to strive for consistency in the process to ease learning and implementation of the system. Much of the challenge centered on the effort to define competencies/standards across workgroups. As the project progressed, it was clear that there were clear differences among workgroups in regards to products and services, customers and resulting job skills and expectations. (2) Time and Resource Constraints. In addition, throughout the process, time and resources were a barrier. Ensuring a smooth roll-out among 600 employees requires time and commitment from all employees. (3) Training Issues. Finally, the greatest challenge during implementation centered on the need to ensure that everyone in the system had the information and skills required to work effectively through a new system.

Strategies Used to Address Barriers. (1) Consistency Across Workgroups. The organization used two strategies in designing the system that allowed for consistency within the process while still allowing for flexibility within workgroups. The first centered on establishing buy-in among workgroup leaders to the core steps of the performance management cycle (e.g., reviewing products and services, professional development planning, reviews, etc.) This was done through a series of "strawman" facilitated focus groups. The agreed upon process, then, would be applied consistently across workgroups. The second strategy was to divide competencies into two groups: those areas that all employees in the division should be competent in (general and leadership competencies) and areas of competency that are position-specific which the workgroups would be responsible for defining. (2) Time Constraints. Each workgroup developed their own strategy to meet pilot implementation rollout dates which varied from outsourcing steps to a facilitator, developing workteams, etc. (3) Training Issues. The organization viewed this area as critical and employed many strategies for meeting communication and training needs. These included:

- Broadcast e-mail and voice mail messages from top senior management.
- A series of information sessions conducted with each workgroup with required attendance.
- A manual distributed to each employee at the information session with explanations and samples of each step in the process.
- An interoffice electronic bulletin board set up for conversations and questions. The interactions were monitored by knowledge managers (usually human resources personnel) who could answer issues and questions.
- A hotline established on voice mail.
- A series of informal brown bag discussion groups.

Comparison/Contrast with the Literature. The interview with Organization A revealed many consistencies with the literature on performance management practices. Primarily, Organization A's system is development-driven, rather than reward-driven. It employs many principles of total quality management, including involvement of individuals in the PM process and integration of business strategy. There is an underlying emphasis on feedback and coaching, although the interview did not reveal specific strategies or elements targeted at this goal. Elements which are *not* currently part of the system include a strong link to compensation systems, performance-based pay, team rewards such as gainsharing, or 360-degree peer review.

Interview with Organization B. Organization B is a small management consulting company. It has about 26 employees that are affected by the current performance management system. These employees are categorized into three groups: supervisors/managers, associates/consultants, and the production staff. Two-thirds of the supervisors/managers directly supervise production staff. Associates/consultants are supervised by one of the three partners/owners. The current PM system is, for the most part, a reward-driven system comprised of a variety of elements that are in different phases of design or implementation: a quarterly 360-degree peer review (pilot implementation), an accomplishment/assignment review (design), and a qualification system (design). In addition, the associates/consultants' performance is assessed by their billable rate on a daily or percentage basis and through client feedback.

For a small organization, the current PM system is a first level response to changing organizational dynamics. A year ago, all employees reported to one of the three partners/owners. With an increase in business activities and in the number of production staff and associates/consultants, senior management agreed that the old system needed an improvement. The senior member of the management team interviewed responded that the old, informal system that worked well for 12 or less people a year ago did not work well with the number of people that they have currently.

Elements of the Current Performance Management System. A central element of the new system includes the adoption of a quarterly 360-degree peer review system. This is regarded as feedback that provides a holistic view of an individual's performance as he or she relates with internal customers. The billable rate system is another element which applies to associates/consultants only. Rates are based on credentials and marketability and are used as a primary performance measure. The partners/owners manage and periodically review the rates of the associates/consultants based on performance outcomes and client feedback. Billable rates do not apply to the production staff. Finally, the qualification system is designed to track the skills acquisition/development of employees and structure rewards for gaining new marketable skills.

Expressed goals for the system include:

- Ensure that the system is fair according to the needs and skills of each employee.
- Provide a total compensation and benefits package.
- Compensate for skills that are valued by the organization.
- Develop a balance between team and individual motivation.
- Link business matrix and goals.
- Reinforce and reflect the organization's values (e.g., honesty, diversity, etc.)

Issues and Barriers. Since the new system has just recently been put into place, issues and barriers to implementation are not yet fully apparent. As new procedures are implemented, new barriers will emerge. However, the 360-degree peer review has garnered some reaction among employees. During the pilot implementation of the 360-degree peer review, employees provided feedback that they were apprehensive with the review procedures (i.e., concerned that they will be "nailed" by one of their peers.) After the first review, employees provided feedback akin to a sigh of relief. They found the review had less negative undertones than expected and identified areas for growth and improvement. Even still, the second 360-degree peer review created a fair amount of apprehension, although not as great as the first.

Strategies Used to Address Issues and Barriers. Based on initial reaction to the 360-degree peer review, efforts to communicate the changes in the PM system in various forms and media were prioritized. The announcement of the new system has found space in the organization's newsletter, electronic mail system, and common areas' bulletin boards. The senior member who was actively involved in the design/implementation has made himself more accessible to anybody who has questions/issues. Comments or opinions, signed or not, were welcomed and addressed during staff meetings. Finally, results of an actual peer review of one of the partners was published and distributed to the rest of the staff to generate open discussion.

Comparison/Contrast with the Literature. The interview with Organization B provided a different perspective in the design and implementation of a PM system when compared to the literature. Organization B's system is a combination of features that are in different phases of design or implementation.

Organization B shows consistency with the literature in its goal to link the PM system to the business strategy/plan. Another consistency is inclusion of periodic performance and compensation reviews.

360-degree peer review seems to be a significant and unique element in Organization B's system. This element occurred once in the set of articles reviewed. This may suggest that 360-degree peer review is a relatively new PM strategy which is just emerging in practice.

The organization's qualification system provided the PM system with a link between development/skills acquisition and reward-driven integration. Organization B's system currently heavily emphasizes a reward-driven integration. However, with the introduction of 360-degree reviews and the qualification system, the PM system is moving in the direction of a more development-driven system.

Discussion and Recommendations for Future Research

This study identified some emerging issues impacting the design or implementation of an effective performance management (PM) system. In reviewing the results from the literature analysis and interview transcripts, the data suggests emerging issues and patterns.

A summary of these issues as identified by the researchers are categorized below with corresponding questions for further research.

Issue: The definition of performance management and its key elements is consistent in theory, but varies in practice. In theory, performance management is consistently viewed as an integrated system with the main purpose of managing and improving employee performance. In practice, there exists a division of how PM is pragmatically designed within organizations. There appears to be an evolution of at least two distinct design orientations: reward-centered designs (those that focus on compensation, rewards, and performance outcomes) and development-centered designs (those that focus on skills/competencies, growth, coaching, and training.) Research is suggested in the following area(s):

- Which orientation tends to be more effective?
- What drives an organization's decision to orient toward reward-centered or development-centered designs?

Issue: The PM system may vary in design based on organizational factors (e.g., size, structure, industry, products, outputs, etc.). There was marked difference in the designs of the PM systems between the study's two interviewees. This may be due, in part, to the differences in the size and nature of the organizations' businesses. This may suggest research on the following questions:

- In the design of the PM system, what factors are considered by organizations in choosing what system to adopt or develop?
- How does the organizational structure (e.g., hierarchical, horizontal/flat, decentralized, etc.) influence the choice of a PM system?
- How does the size of an organization (e.g., small, medium, or large) affect the choice of key elements in a PM system?
- Are there common elements of PM systems within and across industries?

Issue: The identified stakeholders and the involvement of personnel at all levels of the organization during the design of PM systems varies dramatically. While it was common for PM systems to involve different levels of personnel during the *implementation* of a new system, owners and stakeholders tend to be limited to senior management during *design*. This may suggest further investigation as follows:

- Are PM systems more effective when all levels of personnel are involved in the design of the system?
- What strategies are used to ensure that every member of the organization becomes a stakeholder in the design of a PM process?
- Are there phases of PM system design that are more critical for individual involvement?

Issue: Organizations which focus on team performance over individual performance may require PM systems of varied design. At least two articles suggested a need for performance management systems consistent with the move toward self-directed teams. A need for proven strategies for review, compensation and feedback in team settings were particularly noted.

- What are current strategies of organizations structured in teams with designing and implementing performance management?

Issue: Feedback systems were emphasized in theory, but lacked clear and consistent implementation strategies in practice. While 90% of the articles reviewed, and both interviewees espoused the importance of feedback to performance management in theory, limited information was provided on the practical strategies used to ensure feedback was applied consistently and effectively at all levels.

- What evidence exists regarding the effectiveness of different feedback strategies?
- What kind of preparation do managers and staff need to ensure feedback is applied effectively within the PM system?

The authors feel that this list represents the most pressing of the issues emerging from this study which will have the greatest impact on the design and implementation of performance management systems. This study represents one step toward better understanding of PM and future research efforts.

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The Human Resource Developer and the Engineer: New Partners for a New Century

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In this dialogue, Professor DeLisle will advance the proposal that the two professions best prepared to meet the business and organizational challenges of the millennium and beyond are: the women and men educated as human resources development specialists and those trained as practicing engineers. The thesis is centered on the premise that these two groups are best suited and most likely to encounter change and discontinuity with the agility needed to prevail to include a strong commitment to interpersonal effectiveness and lifelong learning. The paper will examine the predominant paradigm of each group, citing contextual and empirical evidence from the professions, and use the construct of dominant problem-solving styles of each group as a medium to show their need and opportunity to collaborate.

From this articulation, strong implications are seen to the compelling need for efficient models of self-directed learning in industry, the growth and development of systemic critical self-reflection in engineering enterprise, and the necessity for the HRD professional to embrace and enhance the introduction of socio-technical systems to the practice of human resource development.

In what seems like another lifetime ago, I worked as a Personnel Manager for Hewlett-Packard Company in Colorado Springs. I had a R&D Manager who was, without a doubt, one of the smartest people I had ever encountered. His strengths were abundant, as a technical contributor, and he certainly knew his way around a profit and loss statement, but there was something missing. We both knew what it was; we just didn't like talking about it very much. It was his interpersonal effectiveness. Don't get me wrong, he was a thoughtful and effective person, but the gap between one set of skills and the other was so great, he looked inept. This had a direct bearing on his perceived effectiveness as a manager. I was his opposite, no technical skill, lots of people savvy. We concluded that between us, we made one good human being. That began my career. The question I sought to answer was: how do engineers develop the interpersonal effectiveness necessary to lead human enterprise? In a relatively simple setting, I had discovered a compelling question, that led me to investigation, study and articulation in this work.

To begin to answer this question, one must understand engineers and the nature of their work. I have often been accused of being engineer-friendly, as in user-friendly. It's because I have a profound admiration for their skill and capability. I like engineers. If for no other reason, it's because they do things that I could never attempt to do. Mostly, it's the way that they think. With that in mind, I began to study the nature of the engineer/scientist, and tried to determine what made them tick. In this endeavor, I turned to a classic in scientific thought, an essay written in 1962, by Thomas S. Kuhn, then a junior fellow at Harvard, but later a professor of philosophy at MIT. In his work, The Structure of Scientific Revolutions, Kuhn describes the fundamental mindset of the scientist and engineer. It is in Kuhn's work that I started to see a glimmer of the bridge that would span the world of the engineer and that of the human resource developer.

Around the same time, I was introduced to Malcolm Knowles, intellectually and personally. Malcolm articulated the other side of the equation quite well. In his dialogue, and his writing *Self-Directed Learning*, he outlined the cognitive climate and the assumptions necessary to create a viable learning environment for adults. One of his fundamental premises was that learning was problem-centered and not subject-centered. Knowles had the confidence to trust that intelligent adults, when confronted with a problem, would move to resolve the issue through whatever means necessary, and learn the necessary skills to do so. They would "engineer" a solution, so to speak. The convergence of thinking here is no mere coincidence. Both Knowles and Kuhn, scholars of the same generation saw the similarity in the forces effecting growing organizations, and articulated some important considerations for us.

Kuhn's premise is very simple and elegant. By the way, this is the ideal state of all engineering endeavor: simple and elegant. Kuhn contends that all scientific endeavor has been shaped by the prevailing

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paradigm of the time. Paradigm, in this context, is a unifying view of the universe, shared by many, that articulates otherwise disjunct ideas. He goes on to state: "a paradigm is rarely an object for replication, rather it is like a judicial decision in common law; it is an object for further review and specification under new or more stringent conditions". In this he also illustrates the premise of all science and engineering. Simply stated, a paradigm is a way to organize thinking, until a better way is found. The interesting by-product of this view is that engineers and scientists are fickle. They hold tenaciously to a concept and treat it as a moment of truth, until something better comes along. At this point, they abandon the "truth" and embrace the new idea with alacrity. Fickle, or conceptually flexible? Go figure.

Kuhn goes on to state that "normal science has a built-in mechanism that ensures the relaxation of the restrictions that bound research whenever the paradigm from which they derive ceases to function effectively." The motivating force that drives all engineering and science is the search for the truth, not in the philosophical sense, but in the practical, or pragmatic. I believe that Kuhn's contribution is more important now that it was thirty years ago.

Technology has been driven by a phenomenon called Artificial Selection by historian, Daniel Boorstin. His premise is that all useful technology drives demand. This can be as simple as an electric light (don't know how we lived without it), to memory on a computer. I used to think that a megabyte of memory was useful. The rules change, constantly and deliberately, and geometrically. Conceptual flexibility is critical to success. Those unwilling to accept the nature of change, embrace obsolescence. Thomas Kuhn is the chief apologist of the knowledge revolution, essentially embracing the need to continue learning, as a premise of professional competence. Surprisingly, engineers accept this wholeheartedly. An underlying value is, technical incompetence is not ignorance, but stupidity.

Enter Self-Directed Learning, considered a curiosity by most orthodox educators. Knowles describes an application-based approach to professional competence. He suggests that learning is a do-it-yourself project. This resembles heresy to most conventional educators and Malcolm is all-but-excommunicated since his work lacks a "theoretical" base. Now the irony here is, that most engineers see Knowles' concepts as thoughtful and prudent, and most conventional schools of education reject it out of hand. (Knowles) Imagine a world where learning is student-centered. Nonsense. Try to conceive of setting a positive climate as conducive to learning. What a concept! Or even more provocative, that learning should be subject or problem-centered and driven by curiosity or incentive internal to the learner. This is obviously a fantasy. Except to those pragmatic, empirically-driven slaves to solving problems, the engineers.

This is where the disciplines run in parallel. Engineers need to continually learn. Conventional schools distribute learning in two units of measurement: Degrees and semesters. Engineers don't have the luxury of solving problems in units of time called semesters (usually fourteen weeks). They must work in a concept called real-time. Educators do not recognize real-time as a concept. Engineers must become renegade or self-directing. Pragmatism prevails and they become self- directing in their learning. They feel impure. The renegades paraphrase Clemenceau: Learning is too important to be left to the educators. This behavior led to the phenomena called Motorola University or Apple University. The engineers call it, "Not Invented Here" which means that if they didn't invent it, it (the product or process) is not reliable.

Here is where the paradigms converge. Don Schoen and Chris Argyris call for critical self reflection on the part of the professional. Engineers or systems thinkers, like Peter Senge, advocate short feedback loops. (Senge) Engineering education routinely talks about the need to continue learning as fundamental to the excellence of the profession. Even more interesting, the areas cited for development fall in the domain of the human resource developer. A recent collaboration between Arizona State University and the University of Illinois discovered to no one's surprise that an inquiry into the preparedness and importance of dimensions of effectiveness for graduate engineers, had problem-solving as the prime need, followed by interpersonal effectiveness. The interesting aspect of this investigation was that respondents felt that interpersonal effectiveness, especially communication was critical in importance, but low in preparedness. If there ever was a prescription for HR developers, it lies here. Industry says get the skills, engineers say yes, but where? Enter the HR professional.

The partnership is based on the recognition of the need and the availability of the skill to develop interpersonal capability, to name one immediate opportunity. The Human Resource Developer by training and inclination can promote dialogue on this subject, identify and organize a response to the need, and continuously audit, measure and improve the process. The Engineer, often cast in the role of the person resistant to change, or interpersonally backward, will embrace a better way of doing things, if it is apparent. Even learning about subjects like: interpersonal communication, teamwork, motivation and behavior and leadership. As a matter of fact, I have experienced that engineers will be quicker to accept and more likely to use new skills, than many other disciplines. The real issue is how to get these two perspectives to coincide and profit from each other.

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A place to start is the cognitive problem-solving styles of the individuals. Michael Kirton's descriptions of adaptors, bridgers and innovators, provides an effective way to see the similarities of the professions and to articulate a strategy to implement this collaboration. Kirton describes adaptors as those of us who look for a few, well-reasoned solutions to problems that have a high probability for success, and are implemented within the system. Innovators are those who look for as many new ideas as possible to solve problems, without regard for the current system. Innovators take risk with untested ideas and often indict the system as the cause of the problem. Two diametrically opposed views, that can be harmonized by the bridger, who has the inclination to see both sides and can articulate the advantages of both. The bridger seeks precise execution of excellent new ideas. (Kirton) Human resource professionals fall into these preferred styles, and not surprisingly, so do engineers. Usually cast as adaptors, as in slow to change, engineers can be and often are highly innovative in their approach to technical problems. Since Kirton's premise is that we are all adaptive and innovative, but have a preferred style, it is possible for one to be technically innovative and interpersonally adaptive. I believe it is driven by the feelings of competence one has in either domain. Conversely, HR people are often seen as innovative in organizational issues, willing to take risk and challenge conventional wisdom as the situation dictates, but often adapt to business imperatives when intimidated by the bottom line thinking of business leaders (DeLisle, 1992). The bridger looks like the emergent hero, but is too often caught between, and as Yankee manager, Billy Martin once said, "Feel strongly, both ways." So where to start?

Understanding the cognitive problem-solving style of your partner is a start. Innovators can reach innovators, and adaptor-to-adaptor dialogue works. Bridgers can make sense out of the process and help broker the change. HR developers have a skill that engineers categorically need: the understanding and practice of interpersonal effectiveness. Some engineers will adopt it readily, and others more slowly and cautiously. All will embrace new learning if they can see a distinct advantage in doing so. HR professionals are also constrained or enhanced by the same factors. All recognize change, but their styles need to be matched to the situation and the need. Two important steps must be taken to initiate the process of dialogue between the two. These are as old as human nature, but germane in conditions of uncertainty, when most of us resort to our most fundamental values as guides. Simply put, HR developers must learn and accept the dynamics of the processes of engineering. Then we must become skillful in meeting the needs of engineers in these domains. The natural reflex is to assume that adaption is the predominant style. This is not so. HR developers, who often advocate "thinking outside the box" to others, must be astute enough to live outside the box with those engineers who dwell there. Engineers must be true to their professional ethos: Willing to learn new and better ways of articulating their craft. This is easier said than done.

I believe what the two professions would profit from would be a shared paradigm. The image that I often articulate is that the engineer of the future is *technically expert and interpersonally effective* represented in a model of the state of dynamic balance, from statics and dynamics, or low amplitude/high frequency signals from circuit analysis. Images for HR developers might range from hard-headed, soft-hearted management (a la Hewlett-Packard) to the Tao, with yin and yang as harmonized forces. We are not that far away from each other in desire or capability. The question is not when, but how we will respond to the hope and expectation of a new generation of engineers who see the HR professional as their best hope and strongest ally.

The name of this shared paradigm is the socio-technical system. This is the image of a purposeful, product-oriented organization that recognizes and responds to the complexities of the modern world with an equal regard for the contribution of people to the enterprise, as the nature of technological advance. All organizations are socio-technical systems. (Taylor) Engineers and HR developers can make them work if they reflect the recognition of interdependence and opportunity.

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The Relationship Between Productivity and Work Team Autonomy and Team Process Effectiveness

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This study compared productivity of twenty-one work teams to team autonomy and process effectiveness. Correlation analysis indicated a strong, significant relationship between productivity and process effectiveness and none with autonomy. Multiple regression analysis indicated that the highest productivity was related to high process effectiveness combined with high autonomy. Emphasis on team process effectiveness such as team problem-solving, accurate feedback against goals, and the team's ability to focus on the future can help promote higher productivity.

United States organizations are increasingly emphasizing high involvement management in response to declining U.S. productivity and intense foreign competition (Sims and Manz, 1983). The trend toward greater employee involvement has been described in the popular literature since the early 1980s. Naisbitt (1982) cited the thrust toward participatory democracy as one of the ten most important trends affecting the U. S. This trend is part of a long-term evolution from early mechanistic management systems to more open, organic approaches to work design based on Systems Theory and the Socio-Technical Systems research of Trist, Bamforth, Susman, Brown, Kemp, Clegg, Wall, and Rice.

U. S. organizations may be "betting the farm" on employee involvement practices to regain a competitive posture, yet there is little data to provide confidence in this direction. Eighty percent of *Fortune* 1000 companies report using employee involvement practices (Lawler, Mohrman, & Ledford, 1992), however, there is little empirical evidence to determine which practices have the highest impact on productivity (Kahnweiler, 1991; Lawler, Mohrman, & Ledford, 1992; Macy, Norton, Bliese, and Izumi, 1990; Macy, Pearson, & Norton, 1989; Pearce and Ravlin, 1987; Wall, Kemp, Jackson, and Clegg, 1986). In a review of 294 articles on participative management published between 1976 and 1990, Kahnweiler (1991) found that only 22 percent of these were empirical in nature. In a review of 58 studies of work experiments, Cummings, Molloy, and Glen (1977) found that the research techniques used in these studies were not comparable with the standards established by quasi-experimental research designs.

Because of the lack of high quality research, many scholars are calling for more closely controlled studies (Cohen and Ledford, 1991; Kahnweiler, 1991) using a variety of work designs (Pasmore, 1988; Wall, Kemp, Jackson, & Clegg, 1986). The present study was designed to add empirical data to the body of knowledge on highly participative, team-based forms of work design, such as self-managing teams, that are being implemented throughout the U.S.

The intent of this study, therefore, is to determine if a relationship exists between work team productivity and the degree of work team autonomy and team process effectiveness.

Critique of Relevant Literature

Several bodies of research provide a foundation for the present study. First, the literature on the evolution of employee involvement from the closed, mechanistic approaches of Scientific Management (Taylor, 1911) to the organic philosophy of human relations approaches (Eoyang, 1980) defines the path to open organizations. Next, based on Open Systems Theory, the Open Organization Model provides a framework for examining the specific factors that impact

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individual, team, and organizational effectiveness. Third, the research on team structure illustrates the characteristics, strengths and limitations of team autonomy. And last, the literature on large-scale change provides a focus on how organizations respond to and are impacted by the need to change.

U. S. Evolution to Employee Involvement The changes from a control model represented by the mechanistic, bureaucratic approaches of the 18th, 19th and early 20th centuries (Morgan, 1986) to a commitment model of employee involvement portends a fundamental change in how organizations are designed and managed (Hackman, 1986). Bureaucracy as a form of organization was defined by sociologist Max Weber as one that "emphasizes precision, speed, clarity, regularity, reliability, and efficiency achieved through the creation of a fixed division of tasks, hierarchical supervision, and detailed rules and regulations" (Morgan, 1986, p. 24). This form of work design allowed an unskilled, rural, non-English speaking work force to cooperate to produce a high volume of a very complex product with consistent accuracy (Womack, Jones, & Roos, 1990). Because people "were considered inherently weak, lazy, avaricious, lustful, and disposed to evil" (Mink, Shultz, & Mink, 1979, p.4), this approach was designed to ensure order and fairness through a high level of command and control (Beer, Eisenstat, & Spector, 1990).

Although mechanistic systems may be effective when interchangeable skills are needed for a stable, predictable, machine-dependent environment, this form of organization can become a limitation in situations where adaptability, innovation, critical thinking, respect for individuals, and cooperation are important. "Clearly, we cannot use the organization of the 1890s to solve the problems of the 1980s" (Kanter, 1983, p. 43).

Changes in the U. S. labor force, patterns of world trade, new technologies, and politics altered work design requirements. As people began to think of work as more than merely a means for survival, new Human Relations theories emerged and the need for integrating the needs of individuals and organizations became a powerful force. Organizational psychologists such as Douglas McGregor, Fredrick Herzberg, and Chris Argyris "began to show how structures, work organizations, and leadership styles could be modified to create 'enriched,' motivating jobs that would encourage people to exercise their capacities for self-control and creativity.... Employees were now to be seen as valuable resources that could contribute in rich and varied ways to an organization's activities if given an appropriate change" (Morgan, 1986, p. 43).

Open Organization Model Based on Ludwig von Bertalanffy's Systems Theory, the open systems perspective "demands that we reconsider the nature of organizations and their evolution" (Pasmore, 1988, p. 3). Morgan (1986) describes three primary issues of Open Systems Theory: 1. Environment; 2. Interrelated subsystems; and, 3. Congruencies between different systems. Although Open Systems Theory constructs affect organizational structure, it is more concerned with organizational processes (Scott, 1977) and focuses on the goals, functions, and processes of self-organization (Mink et al., 1979).

Building on these concepts, the Open Organization Model (Mink et al., 1979) views the individual, the work group, and organization as a total system composed of subsystems and analyzes the effectiveness of these systems internally in relation to each other and in relation to the environment. The model provides a framework for change that provides a vision of organization potential and permits systematic diagnosis of organization growth needs.

Work Team Structure Employee involvement and team-based structures are not new. Decades of popular literature and management research focus on employee involvement programs, including quality circles, problem-solving groups, parallel organizations, labor-management committees, different rewards systems (Magjuka and Baldwin, 1991) and participative management (Kahnweiler, 1991). Employee involvement, defined as *the extension of power to make decisions, business information, rewards for performance, and technical and social skills to the lowest levels of the organization* (Lawler, 1986) is very common in the U. S. and tends to be implemented broadly rather than deeply.

Several key factors influence the change to high involvement structures: The focus on lean staffing, decentralized staff support, and maintaining flexibility and responsive service (Beer, Eisenstat, & Spector, 1990), all driven by changing environmental conditions.

There are strengths associated with *team-based* high involvement structures such as: Providing a source of improvement in work methods and procedures (Katz, Laughlin, & Wilson, 1990; Lawler, 1986; Trist, Susman, & Brown, 1977; Walton, 1977); increased attraction and retention (Beekun, 1989; Lawler, 1986; Trist et al., 1977; Walton, 1977); increased staffing flexibility (Lawler, 1986; Musselwhite and Moran, 1990); increased service and product quality (Katz, Laughlin, & Wilson, 1990; Lawler, 1986; Musselwhite and Moran, 1990; Versteeg, 1990); increased concern for quality (Cummings and Molloy, 1977); increased rate of output (Cummings and Molloy, 1977; Goodman, Devadas, & Hughson, 1988; Katz et al., 1990; Lawler, 1986; Musselwhite and Moran, 1990; and Versteeg, 1990); reduced need for staff support (Lawler, 1986; Musselwhite and Moran, 1990; Versteeg, 1990); reduced need for supervision (Lawler, 1986; Musselwhite and Moran, 1990), improved decision quality (Lawler, 1986); and finally, increased employee satisfaction (Cohen and Ledford, 1991; Rosenback and Zawacki, 1989; Trist et al., 1977; Wall et al., 1986).

The potential benefits are great, especially when the technology creates task interdependence (Lawler, 1986), however the potential for failure is also great (Hackman, 1986). There is no guarantee that work teams will produce the desired effects in any particular situation. An organization must make a major commitment in time, resources, and sheer faith when changing to a work team structure.

Changing to a Team-Based Structure Scholars are identifying conditions needed for effective implementation of team-based employee involvement (Hackman in Pallack, 1986; Kumar, Replogle, & Beyerlein, 1991) that focus on the structure and processes that enhance a team's ability to focus on its own goals, interact with its environment, and evaluate the outcomes of its actions.

The change to a team-based structure is representative of any system-wide change in which success is dependent of gaining the support and commitment of the stakeholders. Mink and Esterhuysen (in press) propose beginning at the work team level while supporting the individual. Beer et al. (1990) reviewed the process in six large corporations and concluded that problems occur when the organization focuses on culture or management, changes the formal structure first, relies on policies to implement the change, starts at the top, and targets core central operations. Successful cases demonstrate that management should concentrate on task alignment and the business's competitive challenges to motivate change.

Synopsis of the Methodology

This study examined the relationship between work team productivity and two variables: Team autonomy (or independence) and team process effectiveness. The correlational approach was selected because correlation coefficients "are best used to measure the *degree* of relationship between two variables and to explore *possible* causal factors that can later be tested in an experimental design" (Borg and Gall, 1989; p. 576). Although some scholars encourage the use of experimental or quasi-experimental techniques, Hackman (1985) suggested that using this approach in organizations may actually be misleading because of the interdependency of actions leading to productivity. Cummings, Mohrman, Mohrman, and Ledford (1985) cautioned that the use of traditional research techniques when studying organizational change can have unintentional consequences because of stronger threats to validity from not being able to closely control all the variables and conditions.

Research Questions Using a collaborative model of research design advocated by Lawler (1985) and Cohen and Ledford (1991), the researcher and the organization identified the issues and questions to study about team productivity, effectiveness, and employee involvement. Two research questions guided the study: 1. Is there a relationship between work team productivity and work team autonomy?; and 2. Is there a relationship between work team productivity and team process effectiveness?

To determine the degree of these relationships, if any, the productivity of 21 of 26 project teams from a southwest division of a Fortune 50 aerospace company was compared to measures of team effectiveness and team independence.

Sample The sample was identified as intact work teams within five major lines of business. Five of the targeted teams did not complete the study. Three were eliminated because they were newly formed and had little history on which the participants could base their assessments. The fourth team was eliminated because they were under a great deal of pressure to recover from program delays. One team that did participate in the study failed to code the two questionnaires correctly and was dropped. Based on this, there is no reason to assume a threat to external validity except for the possibility of the one team eliminated because of delays, however, this would have been only one team out of 22. The teams were very homogenous in nature, allowing for sound conclusions based on the results.

Measures Work team autonomy was measured through the use of a new instrument (Glaser, 1991) based on the work of Gulowsen (1971), a Norwegian social scientist. The instrument examines seven factors of team autonomy that are compatible with the research available to date on work team autonomy and measures the degree to which team members report being able to influence: Team goals, performance, production method, task assignment, membership, leader, and individual work operations.

Team process effectiveness was measured through completion of the Team Effectiveness Survey (Mink, Owen, and Mink, 1989) which is based on Culbert's task phase model and Open Systems Theory. This instrument measures team members' assessment of the following constructs: Having a common, clear sense of purpose, trust, valuing individual differences, effective feedback mechanisms and problem-solving systems, and the ability to let go of the past and focus on the next assignment.

A review of the norming processes, sub scale analysis, internal and external validity, and reliability data for each of the instruments indicated that these instruments would provide solid data concerning each of the constructs related to team autonomy and team process effectiveness.

This study employed a standard, objective measure of productivity that allowed a valid comparison of productivity across all teams in the study. This measure included each team's performance against the contracted cost and schedule commitments.

These measures were correlated using the Pearson r, which is appropriate when variables to be correlated are expressed as ratio data or interval data and is the most reliable estimate of correlation (Gay, 1987). Examination of the scatter diagrams indicated a linear relationship, thus not requiring the use of an eta ratio. A two-tailed test was used because no direction of the possible relationship was predicted.

Although, traditionally the lack of an experimental design might pose a threat to external validity by limiting the degree of generalization possible, respected scholars in the field of organizational change have suggested that a non-experimental design may not be a limitation; conversely, using an experimental design might actually pose the greatest threat. Hackman (1985) suggests that finding an organization that would allow researchers to enter the organization, randomly assign employees to groups, randomly assign conditions to those groups, and present any changes or outside influences during the study period would be such a rarity, that the results gained in this manner could not be generalized to any other organizations.

Content validity of the measures were supported by information in the literature and by the instruments' authors' explanation of the basis for selecting the measures of each construct.

Synopsis of the Findings

The analysis for each hypothesis is dependent on the relationship between the autonomy and process effectiveness constructs and productivity. Productivity was examined in three ways: (a) A general productivity index that combined cost and schedule performance; (b) cost performance; and (c) schedule performance. The general productivity index correlated highly with cost (.9679 p=.000) and slightly negatively, although not significant, with schedule (-.1831 p=.427). This indicates that the productivity index is primarily a reflection of the degree to which the team is on budget rather than a reflection of their schedule performance.

Table 1. Summary of Findings and Conclusions for Research Question 1. Productivity and Team Autonomy

	Null Hypothesis Topic	CORRELATION r	CONCLUSION
Ho^{1a}	Influence volume of work (Goals)	.3507 P=.119	FAIL TO REJECT
H_0^1b	Establish team performance norms (Performance)	.0318 P=.891	FAIL TO REJECT
H_0^1c	Establish team prod. methods (Production)	.0323 P=.889	FAIL TO REJECT
H_0^1d	Assign tasks	.1634 P=.479	FAIL TO REJECT
H_0^1e	Select members	.1214 P=.600	FAIL TO REJECT
H_0^1f	Select leaders	.3415 P=.165	FAIL TO REJECT
H_0^1g	Individual work operations (Jobs)	.2041 P=.375	FAIL TO REJECT
H_0^1	**Combined: Team autonomy and productivity**	**.2540 p=.267**	**FAIL TO REJECT**

Autonomy Based on the correlations of the work team productivity index and each of the factors, or sub scales, there are no correlation coefficients that are below the .05 significance level, introducing too high a probability of a type I error. Power analysis indicated a much larger sample would be needed to support the two correlations found (establishing team goals and selecting a leader) that were lacking in significance. When cost and schedule performance were analyzed separately, no correlations were found to be significant. Based on this analysis, there is little effect size for work team productivity and team autonomy. Table 1 summarizes these findings.

Process Effectiveness The results of correlations of the process effectiveness sub scales point to a relationship between productivity and three process effectiveness constructs that are significant: Team problem solving (.5276 p=.014), feedback mechanisms (.4636 p=.034), the team's ability to let go of the past and move on (.3921 p=.079). The degree to which team members value individual differences (.3618 p=.107) and having a common, clear sense of purpose (.3376 p=.135) demonstrated a relationship but the significance level was not high enough to provide confidence of avoiding a type I error and the power analysis did not indicate that the low *n* might have masked an acceptable α. When cost and schedule performance was separated, cost performance was related to problem-solving (.5468 p=.010). Schedule performance, however, seemed to have little relationship with process effectiveness factors.

The strength of the relationship described between the productivity index and the process effectiveness sub scales indicates that the productivity index would also be correlated to the total mean scores for process effectiveness. This is indeed the case (.4652 p=.034). When considering the individual elements of productivity, process effectiveness is more highly correlated with cost performance (.4350 p=.049) than to schedule performance (-.0203 p=.930). Table 2 summarizes the findings for the correlation of all sub scales with productivity.

Other Possible Variables To identify other possible variables that might be related to work team productivity, a qualitative measure was used to provide additional verification of the data collected. Each work team leader wrote two critical incident reports (before they were aware of the constructs being studied) describing a situation in which the team functioned effectively and a situation in which the team did not function effectively. They then described the role played by each of the constructs measured by the instruments, if any. A panel of experts in group processes analyzed the reports and identified themes that might be related to team productivity (budget and schedule achievement), determined which themes were already addressed by the instrument sub scales, and identified possible principles from the remaining themes that might also be related to work team productivity. Several possible additional constructs were identified that might be related to work team productivity: 1. External influences and integration with external systems; 2. Interaction of team members; 3. Responsiveness to customer expectations; 4. Demonstrated commitment and initiative; and, 5. Competitive spirit and a sense of challenge.

Table 2. Summary of Findings and Conclusions for Research Question 2. Productivity and Process Effectiveness

Null Hypothesis	Topic	CORRELATION r	CONCLUSION
Ho^{1a}	Purpose	.3376 P=.135	FAIL TO REJECT
$H_0^{1}b$	Trust	.1300 P=.574	FAIL TO REJECT
$H_0^{1}c$	Recognize Individual Differences	.3618* P=.107	FAIL TO REJECT
$H_0^{1}d$	Feedback	.4636* P=.034	REJECT
$H_0^{1}e$	Group Problem Solving	.5276** P=.014	REJECT
$H_0^{1}f$	Celebrate & Move On	.3931+ P=.079	FAIL TO REJECT
H_0^{1}	**Combined: Team process effectiveness and productivity**	**.4652* p=.034**	**REJECT**

Implications for HRD Practice

Although HRD practitioners have long emphasized process effectiveness in helping teams achieve higher levels of productivity, U. S. business seems to be taking a "leap of faith" and betting on high involvement work design. The results of this study indicate that team autonomy alone is not related to team productivity. Although other studies (Cohen and Ledford, 1991) have identified relationships between productivity and team autonomy, the measures of productivity and autonomy were far more subjective. In the Cohen and Ledford study, productivity was a performance rating by the team's managers without controlling for the many different possible interpretations and ratings among all the managers, a limitation cited by the authors. The productivity measure used in the present study, however, is the objective data from each project's status report for the same time period and ensures consistent application across all teams. It appears that HRD's emphasis on process effectiveness, however, is supported. It seems intuitive that teams making many of their own decisions will need higher levels of team process effectiveness.

Correlational analysis cannot determine causality. Although it seems reasonable that effective process skills, such as effective problem-solving, having effective feedback mechanisms to track progress toward objectives, and the ability to move out of the past and focus on the current tasks would contribute toward productivity, this might actually be reversed, with productivity acting as a driver of these constructs.

Implications for Future HRD Research

To eliminate other possible variables that might be related to productivity, future research might begin with the other possible constructs identified by the panel of experts from the critical incident reports. In addition, replication of this study would validate the findings that are contradictory to the direction of U.S. work design.

Although this is the first study of work team autonomy and productivity with professional, or "white collar" teams, others are needed to validate the application of these findings to other similar environments.

In addition, there were no empirical studies found that provided a longitudinal focus on work team productivity. This would add information on how to sustain productivity throughout all stages of a work team's life cycle.

Perhaps the most significant future research need illuminated by this study is additional exploration of productivity. One contribution made by this study was the use of a standard measure of productivity across teams. In-depth exploration of productivity factors such as cost and schedule performance as used in this study might provide a basis for increasing knowledge about productivity and its determinants.

There is no guarantee that high involvement work designs will produce the desired results in any given situation. Hackman (1986) suggested that autonomous teams are found on both ends of an effectiveness continuum, a prediction supported by this study. An effective work team can achieve a level of synergy and agility that could never be designed in by organizational planners and managers, however, a poor self-managing team would perform worse than a smoothly-functioning traditional unit.

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A Team Assessment Instrument

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This study analyzed the reliability and validity of scores from a team assessment instrument developed by the researcher. Findings indicate the reliability of instrument scores is adequate with a reasonably small standard error of measurement (SEM). Findings indicate that increasing the number of team members raises the reliability of instrument scores and decreases the SEM more than increasing the number of instrument items. Findings also reveal a correlation of .807 between the traits of cohesiveness and performance.

Before beginning this paper, I would like to acknowlege the extraordinary efforts of my doctoral advisors at Penn State: Drs. David Passmore and Hoi Suen. Also, I would like to thanks my other committee members, Drs. Ken Gray and Bill Rothwell, for their contributions to my research. This papers is extracted directly from my thesis research (Allen, 1994) and is modified to fit within the space limitations provided in this document.

As organizations move to team-based environments they must be aware of the importance of the reliability and validity of their team assessment instruments. Organizations sometime believe that instruments that are sold to them are both reliable and valid. As results from this study show, reliability is very dependent on the size of the team studied. The validity of a complex assessment instrument, is an even more difficult to prove. As organizations move toward team-based compensation, they must be aware of measurement consequences.

Background

Teams are becoming more structured and more important to the functioning of successful organizations. Organizations develop teams of people to solve organizational problems or to improve organizational processes. A team that hopes to meet its goals sucessfully needs feedback from the organization on its progress toward organizational goals (Senge, 1990). Unfortunately, most organizations have few measures of team development and performance (Lanza, 1988), and thus experience difficulty in assessing success or failure.

Measures of team cohesiveness and performance are important components of assuring team progress and success (Bannick, Roach, and Salas, 1993). The team assessment instrument developed as part of this research measures these two team components.

Cohesiveness and performance should be defined to provide a context for the team assessment instrument scores. Team cohesiveness is measured according to the degree of members' motivation to remain in the group (Golembiewski, 1962), and work together toward team goals. Team performance is measured by the teams' accomplishment of defined goals, provision of a service to customers, or manufacturing of a product.

The reliability and validity of scores from a team assessment instrument developed by the researcher were analyzed in this research. The research measurement methods used to assess the team assessment instrument scores provide organizations with information that will help in their selection of this team assessment instrument for their team evaluation process.

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Purpose of the Study

The purpose of this study was to assess the reliability and validity of scores from a newly created team assessment instrument. Team assessment instruments reviewed as a part of this study did not provide statistical information on their reliability or validity with the published instrument. This study attempted to fill this gap in published team assessment research.

Research Questions

The following two research questions are answered in this study:

1. What is the reliability of the team assessment instrument scores? This question addresses individual instrument item reliability and the reliability of rater scores. Reliability was assessed through an analysis of team members' scores on the team assessment instrument.

2. What is the validity of the team assessment instrument scores? This question addresses construct validity, content validity, convergent validity, and divergent validity. Validity was assessed through an analysis of team members' scores on the instrument, supervisor scores on the instrument, and customer scores on the instrument.

Development of the Team Assessment Instrument

Subject matter experts were asked to assess 70 team cohesiveness and team performance items. The subject matter experts categorized 21 items as team cohesiveness items and 49 items as team performance items. These procedures are explained in the methods section.

Once divided, the 70 items were then developed into three instruments: "Team Assessment Instrument (team version)," "Team Assessment Instrument (supervisor version)," and "Team Assessment Instrument (customer version)." These instruments will be referred to hereafter as the team instrument, the supervisor instrument, and the customer instrument. The team and supervisor instruments included all 70 instrument items (cohesiveness and performance). The customer instrument contained only the 49 items classified as team performance items. The customer instrument allowed the customer to rate only team performance because of the limited interaction between the customer and the team.

Each of these three instruments used a Likert-type scale of one to five. One represented "strongly disagree," two represented "disagree," three represented "no opinion," four represented "agree," and five represented "strongly agree" for each of the individual instrument items. The first page of each instrument contained a description of its background and organization. This section was customized on each instrument for the intended audience. The back inside cover of each instrument asked for background information about the participant. This background information was used in the generalization of assessment results.

The team instrument was pilot-tested with 58 team members from one organization. This pilot study (Phase I) was conducted to test study procedures and check internal instrument reliability. The pilot study procedures are explained in the methods section.

The findings from the pilot study were positive for the study procedures and internal instrument reliability. Therefore, the researcher did not revise the instrument after the pilot study.

Related Literature

Total Quality Management and Team Assessment Many organizations are currently investigating total quality management (Benson, 1992; Gordon, 1992; Benson, 1993). Total quality programs often focus on continuous improvement, customer satisfaction, benchmarking (Jacob, 1993), and teamwork (Deming, 1982; Benson, 1992).

Teams are a cornerstone of the total quality movement (Scholtes, 1988). Historically, American organizations have been hierarchical, with each level of an organization directing lower levels of the organization toward its goals. Within the total quality philosophies, individual members of the organization are made aware of its systems and strive to move it in the right direction through their individual efforts within the system (Deming, 1982; Senge, 1990).

Teams are a successful way for organizations to increase productivity in today's competitive market. Organizations such as Xerox, Procter & Gamble, General Motors, and Federal Express have increased productivity from 13 to 40 percent through the use of teams (Orsburn et al., 1990).

In 1992, eight out of ten organizations with 100 or more employees had teams in their organizations (Gordon, 1992). Benson (1992) states, "Experts are encouraged that two integral components of the TQM agenda - quality results and team performance - are more widely being embraced by U.S. companies" (p. 67). The American Society for Quality Control (1993) found that seven of ten employees identified team activities as part of a formal organizational quality program. Also, the American Society for Quality Control found a high correlation between issues that are important to the organization and those that are important to its teams.

As total quality philosophies evolve, teams are becoming more structured and more important to the functioning of a successful organization. Organizations are developing teams of people to implement positive changes within the organization. These changes may include more effective management of complex processes, rapid response to changing work demands, motivation of team members, higher quality decisions, commitment to carry out decisions, and increased cohesion of the team (Lawler, 1988). One problem such teams is the lack of measures of team successfulness (Galagan, 1992).

Team Assessment Research Team assessment instruments have been created and used by organizations. Organizations have created instruments that have been used internally or sold for use by other organizations. In some cases, these instruments have been published in the literature. These instruments published in the literature have not been accompanied by statistical data related to their validity or reliability.

The Team Handbook (Sholtes, 1988) is a reference guide that has been adopted by many organizations using teams in a total quality management environment. Since the statistical information for other team assessment instruments has not been published, Scholtes' theories of team development and his "recipe for team success" were used as a starting point in the development of the team assessment instrument items.

Research Methodology

Due to the space limitations of this publication, the author will not delve into the detailed statistical methods of this research. The data analysis procedures used to answer reliability and validity questions for the pilot study and data collection are discussed in this section.

Population The target population consisted of personnel in industrial organizations. The accessible population for this study consisted of personnel from three selected industrial organizations in central Pennsylvania. With assistance from the researcher, representatives from the participating organizations identified teams with 2 to 32 members, one supervisor for each team, and one customer for each team. All teams studied were active these participating organizations, and all teams had existed for two weeks to four years.

Sampling The sampling methodology was separated into three parts: sampling of individual team members, sampling of a team supervisor, and sampling of an internal or external customer of the team. Each sample, though collected once, could be used in more than one assessment of the instrument's reliability or validity. A selective sample of team members, supervisors, and customers assured a balanced design and an even distribution of participants to effectively evaluate the team assessment instrument. Participants were chosen through the cooperative efforts of an organizational representative and the researcher.

Team Members. The sample of team members was drawn selectively from the population. The team member sample consisted of 2 to 32 individual team members from the organizations described in the population. Team member sampling was used to assess instrument reliability and validity.

Supervisors. The sample of team supervisors consisted of one supervisor from each of the teams described in the population for a total 32 supervisors. The organization's representative identified a team supervisor that could best assess team cohesiveness and performance. Supervisor sampling was used to assess instrument validity.

Customers. The sample of team customers consisted of one customer from each of the teams sampled from the population for a total 32 customers. The organization's representative identified a team customer (internal or external) that could best assess team performance. Customer sampling was used to assess instrument validity.

Reliability

Pilot Study A selected manufacturing organization identified five teams with 4 to 23 team members on each team for a total of 58 team members. The identified teams were active in the organization and were involved in various manufacturing and service activities. The pilot study was used to analyze the reliability of the items in the assessment instrument. Supervisor and customer sampling was not necessary for analyzing the internal instrument reliability in the pilot study.

Design of the Pilot Study Analysis Individual item reliability within the instrument, team member reliability, and team reliability were analyzed using GENOVA (Crick & Brennan, 1983). This GENOVA mainframe statistical program was used to determine internal instrument reliability and rater reliability. The program gives information similar to that provided by the classical approaches (Cronbach Alpha, standard error of measurement, Spearman-Brown, etc.). The advantage of the GENOVA program over these classical approaches is that it provides a flexible assessment of multi-faceted problem measurement errors that cannot be assessed through classical approaches (Suen, Lu, Neisworth, & Bagnato, 1993).

Universe of Admissible Observations Generalizability theory views assessment as a sequence of sampling within a defined setting (Suen, Lu, Neisworth, & Bagnato, 1993). The universe of admissible observations defines the scope of the generalizations that can be made from the assessment results. The scope cannot extend beyond this universe of admissible observations.

The universe of admissible observations for our cohesiveness results includes team member ratings and overall team rating of team cohesiveness as assessed by items 1-21 of the team instrument. The universe of admissible observations for the performance results includes the team member ratings, and team rating of team performance as assessed by items 22-70 of the team instrument. Item reliability of the instrument was studied, through GENOVA, using two identical designs to analyze the reliability of the two sections of the instrument (cohesiveness and performance).

Team members are specifically defined as members of the team being assessed. The team is specifically defined as the total number of all team members are identified by the organization and the researcher as an organizational team. Thus, the universe of admissible observations for the pilot study cohesiveness results includes only team member ratings and team rating of team cohesiveness as assessed through items 1-21 of the team instrument.

The items for the analysis of team performance are drawn specifically from all items related to team performance (22-70). Team members are specifically members of the team being assessed. The team is the total number of all team members identified by the organization and the researcher as an organizational team. Thus, the universe of admissible observations from the pilot study performance results includes only the team member ratings and team rating of team performance as assessed through items 22-70 of the team instrument.

G-study Design Sources of score variation can be analyzed through GENOVA. A G-study attempts to identify measurement error in observed scores through analyses of the sample data within the universe of admissible observations. Two separate G-studies were used to analyze the measurement error in team cohesiveness and performance scores.

The assessment of the team instrument is multi-faceted. For each of its two sections (team cohesiveness and team performance), score variation can be attributed to true variance between teams (t), systematic variance across items (i), systematic variance between team members nested in teams ($m{:}t$), and/or variance due to an interaction of these dimensions. Symbolically, this score variation can be described as $(m{:}t)i$. This design will provide 1) true variance due to team rating of the team σ_t^2; 2) systematic error due to team member ratings within the team $\sigma_{m:t}^2$; 3) systematic error due to sampling of (cohesiveness or performance) items σ_i^2; 4) random error due to the interaction between the team ratings and items σ_{ti}^2; and 5) random error due to interaction among teams, team members, and items $\sigma_{(m:t)i}^2$. By comparing these components of variation, exact sources of error can be identified. Teams are considered the object of measurement in the design analysis; therefore, σ_t^2 should be relatively large and all other variance components should be relatively small. Individual score variation is explained using the following linear model:

$$\sigma_{(m:t)i} = \sigma_t^2 + \sigma_{m:t}^2 + \sigma_i^2 + \sigma_{ti}^2 + \sigma_{(m:t)i}^2 \qquad (1)$$

D-study Design For each of the G-studies (cohesiveness and performance), several decision study (D-study) scenarios were used to analyze instrument reliability in light of changes in the number of instrument items or the number of team members on each team. Reliability and error estimates were derived for each of these options.

In this reserach, team members (M) and instrument items (I) are considered random facets. To distinguish between the G-study design and the D-study design, lowercase subscripts are used for the G-study and uppercase subscripts are used for the D-Study.

Team members in the D-study are considered representative of those on the team. Items used in the D-study are considered representative of all items that can be used to assess the team (cohesiveness and performance).

Error estimates are described in the G-study and in the D-studies. In addition to these error estimates, each of the D-studies also estimates instrument reliability. The instrument reliability scores are interpreted through a relative model (norm-reference). Other error and reliability components described in the D-study scenarios are error variance $(\sigma^2(\delta))$, standard error of measure $(\sigma(\delta))$, and the G-Coefficient $(\mathrm{E}\rho^2)$.

Pilot Study Decisions The objective of the pilot study was to determine whether increasing or decreasing either the number of instrument items or the number of team members on each team would increase the reliability of the instrument. If reliability was low, other options included rater training and/or limiting the population.

Rater training can be accomplished in two different ways. First, the rater can be given more detailed written instructions for the instrument. Second, the rater can be given a videotape that will teach him/her explains how to better rate the team through the team assessment instrument created for this study.

Placing a limit on the target population can be used as a last measure to increase the instrument reliability. By gathering background information from the participants, the researcher can identify areas of the population that have a low reliability score. Limiting the generalizability of instrument results increases the overall instrument reliability.

Data Collection Phase I of this study was a pilot study of a selected organization from the population. Phase II involved data collection from two other organizations. In each of these phases, data was collected for use in several analyses of reliability and validity. These sampling phases and the number of individuals involved in each sample are described in Table 1.

The data collection (Phase II) of the study followed the completion of the pilot study (Phase I). Most steps in the methodology of the data collection phase (for reliability) were identical to the pilot study with the exception of the number of team members involved in the data collection phase. This phase involved a selective sample of 29 teams from the population. Table 1 presents the distribution of team members in the reliability phase of the data collection. Limitations in GENOVA required a balanced number of team members on each team. For analysis purposes, five team members were selected randomly from each of 29 teams studied.

Table 1. Sample Distribution and Reliability Analysis Matrix

	Reliability	Validity	
Sample	GENOVA	MTMM	Factor Analysis
Pilot study (Phase I)			
Number of organizations	1	N/A	N/A
Number of team members before analysis	58	N/A	N/A
Number of teams	5	N/A	N/A
Number of team members in each team (for analysis purposes)	4	N/A	N/A
Number of team members (for analysis purposes)	20	N/A	N/A
Number of team supervisors	5	N/A	N/A
Total number of team customers	5	N/A	N/A
Number of participants in Phase I	68	N/A	N/A
Data collection (Phase II)			
Number of organizations	3	3	3
Number of team members before analysis	301	308	308
Number of teams	29	32	32
Number of team members in each team (for analysis purposes)	5	N/A	N/A
Number of team members (for analysis purposes)	145	308	308
Number of team supervisors	N/A	32	N/A
Number of team customers	N/A	32	N/A
Number of participants in Phase II	N/A	372	308

Note: MTMM = Multi-Trait Multi-Method Matrix

Validity

Subject Matter Experts The subject matter experts assessed the content and construct validity of instrument items. In assessing validity, experts placed the 70 items into two categories: cohesiveness and performance. Experts also assessed the representativeness of instrument items to the universe of items that should be asked of team members, supervisors, and customers to assess organizational teams.

In assessing the validity of the instrument questions, the subject matter experts assisted in two aspects of instrument validation. First they received a single envelope with 70 evaluation items on 70 separate strips of paper. Without the benefit of definitions, these individuals divided these items into two separate envelopes labeled team cohesiveness and team performance. Second, the subject matter experts were asked to suggest revisions to any of the questions or to add questions that they believed should be represented in the assessment instrument. The items were categorized as cohesiveness or performance items through majority decision.

Multi-Trait Multi-Method Matrix Evidence of interpretation validity was demonstrated through the multi-trait multi-method (MTMM) matrix. This matrix was used to build divergent and convergent validity evidence and to show the internal reliability of a score in a single table.

The MTMM matrix uses terms found commonly in most statistical research, but they are used slightly differently in the analysis of the MTMM matrix.

A *trait* is defined as a characteristic of an object or person that is stable over time. Although a trait is considered a stable measure, the definition is not strictly followed in this application of the MTMM matrix. In many applications, a trait is loosely defined as an important measurable characteristic of an object. Researcher-defined traits should be as dissimilar as possible. This dissimilarity will allow better generalizability of the MTMM matrix results. The traits identified in this study are team cohesiveness and team performance.

A *method* is defined as the process of measuring the characteristics of an object or person. The methods of measure can be similar or dissimilar methods, though dissimilar methods will allow better generalizability of the MTMM matrix results.

"*Reliability* is the agreement between two efforts to measure the same trait, through maximally similar concepts" (Campbell & Fiske, 1959). This reliability definition is used in the MTMM matrix.

"*Validity* is the agreement between two efforts to measure the same trait through maximally different methods" (Campbell & Fiske, 1959). This validity definition is used in the MTMM matrix.

"*Convergent validity* is inferred from substantial correlation between same traits assessed by different methods" (Marsh, 1982). This definition of convergent validity is used in the MTMM matrix. Convergent validity shows the relationships of different methods of measurement by measuring the same trait.

"*Divergent validity* is inferred from substantial lack of correlation between different traits" (Marsh, 1982). This definition of divergent validity isused for the MTMM matrix. Divergent validity shows the lack of relationships between different traits.

Two "traits" were identifiedfor use in assessment of organizational teams: cohesiveness and performance. Three "methods" were identified to assess organizational teams: team member ratings, supervisor ratings, and customer ratings. By using this matrix, the researcher can show reliability scores, convergent validity scores, and divergent validity scores in a single table. The MTMM matrix was designed to provide the researcher with additional validity evidence.

The data collection used in the MTMM matrix included a sample of 308 team members, 32 supervisors, and 32 customers from the population (see Table 1). The interpretation of the MTMM matrix results (Campbell & Fiske, 1959) is provided in Table 2.

Table 2. Multi-Trait Multi-Method Matrix

		A	A	B	B	B
Traits	Methods	1	2	1	2	3
A	1	r				
A	2	cv	r			
B	1	dv	dv	r		
B	2	dv	dv	cv	r	
B	3	dv	dv	cv	cv	r

Note: Traits = A - Cohesiveness
B - Performance
Methods = 1 - Team Score
2 - Supervisor Score
3 - Customer Score

Terms = r - Reliability
cv - Convergent Validity
dv - Divergent Validity

Factor Analysis

Factor analysis allows researchers to explore the relationship of individual items within an instrument to its content constructs (cohesiveness or performance traits). Using factor analysis, the researcher assessed item relationships to demonstrate the instrument's construct validity. The individuals involved in the factor analysis sample are described in Table 1.

In this research a confirmatory analysis model is estimated and evaluated. The model contains two latent variables that are described as cohesiveness and performance. Cohesiveness is described by items 1-21. Performance is described by items 22-70.

For the purpose of benchmarking, the two latent variable model is compared to an alternative model containing one latent variable described as teamwork. Teamwork is described by items 1-70. This one latent variable specification (teamwork) serves only as a benchmarking tool for analysis purposes and should not be considered a practical alternative model.

Estimation Parameters for the model are estimated through iterative unweighted least squares (ULS) techniques. These techniques minimize the models fit function by successively improving the parameter estimates (Jöreskog & Sörbom, 1984).

The fit function for maximum-likelihood (ML) is based on the assumption that the observed variables have a multinormal distribution. Under this assumption, the estimation of fit is most precise in larger samples.

Evaluation Several consistency checks were made to determine the appropriateness of item (items 1-70) attachment to two traits (cohesiveness and performances). These consistency checks were an adjusted goodness-of-fit index (AGFI), coefficient of determination, and root mean squared residual (RMR).

The adjusted goodness-of-fit index (AGFI) shows the discrepancy between the observed and hypothesized relationship among the item attachment to traits adjusted by the degree of freedom. The AGFI varies from zero to one, with values close to one indicating a stronger fit than those values nearer to zero (Jöreskog & Sörbom, 1984).

The coefficient of determination indicates how well the items serve to measure the latent variables of cohesiveness and performance. The coefficient of determination varies from zero to one. Coefficient values close to one indicate a good model (Jöreskog & Sörbom, 1984).

The root mean square residual (RMR) is defined as the average of variances and covariances of the residual matrix. Averages close to zero indicate small average differences in the correlations between observed measures and the hypothesized model (Jöreskog & Sörbom, 1984).

Findings and Discussion

What is the Reliability of the Team Assessment Instrument Scores? The findings of the team assessment instrument (cohesiveness and performance) indicated that the reliability of the instrument scores was adequate with a reasonably small standard error of measurement. Findings also indicated that increasing the number of team members raises the reliability of instrument scores and decreases the standard error of measurement (SEM) more than an increase in the number of instrument items.

What is the Validity of the Team Assessment Instrument Scores?

Subject Matter Experts. Without the benefit of definitions, subject matter experts were asked to categorize the instrument items into cohesiveness and performance categories. The experts unanimously agreed 51.4% of the time on the placement of an individual instrument item.

All other items were decided by a majority decision. Evidence of content validity was demonstrated by the experts' agreement on the placement of the 70 instrument items into the two categories of cohesiveness and performance.

After all of the questions were added or addressed, the experts unanimously agreed on the representativeness of the sample. Evidence of content validity was demonstrated by the experts' agreement on the 70 items used in the team assessment instrument created for this research.

Multi-Trait Multi-Method. Divergent validity correlations ranged between -.27 and .95. These correlation scores should be relatively close to zero. Therefore, evidence of divergent validity could not be inferred from the MTMM matrix.

Convergent validity correlations ranged between .20 and .80. These correlation scores should be relatively close to one. Therefore, evidence of convergent validity could not be inferred from the MTMM matrix.

Lack of convergent and divergent validity evidence in the MTMM matrix can be attributed to the high correlation between the two traits of cohesiveness and performance (.807). Although this correlation does not support the convergent and divergent validity findings in the MTMM matrix, their correlation shows the possibility of a relationship between the team cohesiveness scores and team performance scores on the created team assessment instrument. MTMM matrix results are provided in Table 3.

Table 3. Multi-Trait Multi-Method Matrix

		A	A	B	B	B
Traits	Methods	1	2	1	2	3
A	1	.85				
A	2	.20	.89			
B	1	.23	.86	.93		
B	2	.33	.95	.80	.94	
B	3	-.27	.84	.55	.71	.94

Note: Traits = A - Cohesiveness; B - Performance

Methods = 1 - Team Score; 2 - Supervisor Score; 3 - Customer Score

Terms = r - Reliability; cv - Convergent Validity; dv - Divergent Validity

Factor Analysis. The adjusted goodness-of-fit indices, coefficient of determination, were adequately close to one with a reasonably small root means square residual. These findings led to the conclusion that the 70 items of the created team assessment instrument had been divided correctly into the two traits. This conclusion adds to the evidence for construct validity.

Factor analysis findings also indicated a correlation of .807 between the traits of cohesiveness and performance. This correlation led to the conclusion that the teams with high cohesiveness scores on the created team assessment instrument also were likely to have high performance scores.

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Developing A Systems Approach for Dysfunctional Teams

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High involvement and self-directed work teams often fail to complete important projects. This loss of productivity by dysfunctional teams prompted investigation. Multiple problem solving activities for 10 different high-involvement and self-directed teams in a mid-sized plant of a Fortune 100 company were analyzed for common traits. A systems approach to problem-solving activity by teams was developed and tested in actual work environments. Teams were found to go through stages of "Initiation", "Hibernation", and "Resolution". Intervention at the proper point in the Resolution phase was found to be successful.

High involvement work teams, where groups of workers actually participate in improving their work activities, are often seen by management as vehicles for improving productivity and quality in an organization (Axelrod, 1994; Brauchle and Wright, 1993). As a matter of fact, properly trained and guided work teams *can* lead an organization to higher productivity, better quality, and bigger profits (Anand, 1993; Bumbico, 1994). They do so by bringing a new perspective to problems and responding to them at the point of application. But sometimes the road to success is not that easy. Once started, teams do not always go straight to success. Sometimes they break down. They become side tracked. Their efforts become blocked (Ray, 1993). Then they stop working on solving problems and start to complain, giving management a biased impression of what they are really doing. When this happens, the system seems to break down and we wonder why we spent so much time and energy developing the teams if they aren't producing good results.

A systems model provides a processural description of a work team's activities. Bales (1950, 1970) found that groups go through three major stages: orientation, evaluation, and control. Fisher (1970) identified four phases that task groups go through in their development: orientation, conflict, emergence, and reinforcement. In each of these two explanations, task groups are progressing through their job responsibilities and communication activities from a recognizable beginning to an identifiable end.

Cragan and Wright (1995) traced a work group's stagic development through a group problem-solving road map; they explained that this process can occur for both zero-history groups and on-going work teams. Cragan and Wright further suggest that task work groups need to accomplish four major group outcomes: productivity;, consensus, membership satisfaction, and quality of work.

This article describes how a typical work team progresses through a project. It depicts a systems model of interrelated steps that a team goes through to solve a work-related problem. The model (See Figure 1) is a synthesis of many teams' goal attainment activities. It is divided into three major sections: (1) Initiation, (2) Hibernation, and (3) Resolution. Throughout these sections there are several critical stages where teams may be blocked. At these times it is important that supervisors, facilitators, and managers act immediately to help the teams address the problems so they can go back to their major function: making improvements in the work process that help the organization. Sometimes outside consultants, those who are helping the teams grow and develop as independent problem solvers, must help keep the teams on track. We prefer that supervisors, facilitators, and support staff assume that role. The following discussion shows why.

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Initiation

The first section in the system describes the process of *initiation*, in which the team takes on a project and conducts its initial problem solving activities. When a high involvement work team (HIWT) embarks on a project, it is usually with a great deal of enthusiasm and high hopes for success. Team members are glad to initiate action. They "brainstorm" the problem and suggest all kinds of possible solutions. They may use cause-and-effect diagrams, Pareto analysis, histograms, or graphs and charts to identify the primary cause of the defect or difficulty. Then they pose a possible solution, and identify those persons who most likely will be able to help them get the job done.

Often, a team will be working on a problem where they do not have sufficient technical expertise. They need extra help and information from "staff." These staff persons may be financial analysts, tool makers, engineers, or supervisors. They may be the head of production or even the plant manager --- anyone, in fact, who has special knowledge or skills necessary to help solve the team's problem. It is to one or more of these staff people to whom the team passes on its request.

Because staff are usually quite willing to work with teams, they readily agree to help with the project. Usually this occurs when the staff member is an invited guest at a team meeting in which the project is spelled out and the staff person's part in it is described. The requested help may be for information or for action to acquire needed materials or supplies for the project. We have seen some teams request help with cost/benefit analysis. Others needed assistance from engineers when the project required a product or workplace modification or a change in product specifications.

Whatever the nature of the request, staff usually promise to "work on it." Often they set a date to report back to the team on their part of the project. At that time, the team can move to the next activity that is needed to bring the project to a conclusion. Sometimes this works very well. Staff members report back with the promised support: needed information, new specification sheets, purchase orders, or maintenance requests with anticipated completion dates. The team uses the information or material to put other segments of their plan into operation. They are well on the way to solving the original problem. But what happens when staff do not respond so well? What happens if they do not respond at all? To understand what effects staff response can have on work teams, we must turn to the second segment of the model.

Hibernation

The second phase is *hibernation*. The initiation phase has been an active one, with the HIWT and staff working on the problem. The phase is a passive one marked by its inactivity.

As we see in the model, the first thing to occur in the hibernation phase is the perception that no action is taking place. Frustration is building up among team members. As the team is not receiving feedback regarding its proposal, it attempts to take positive action by following up on the problem. The team starts to feel a condition we call "HIWT Stress" -nothing is happening and it is not uncommon for gripe sessions to take place. Comments by teams members such as "I told you nothing would happen" become commonplace.

The staff feels harassed and reacts negatively to the team even following up on the proposal. Staff members feel they just don't have the time to work on the latest HIWT item. After all, this isn't the hottest issue and it certainly doesn't rate that high on a supervisor's priority list! This is the point where HIWT facilitators and champions need to enter the fray and help teams bring the project to conclusion. Obviously, the team needs to communicate to the facilitator that the team needs help. After all, it is in the best interest of the team and the organization to move out of the *hibernation* phase. After the facilitator becomes aware of the team's inactivity, he or she should be ready to do three things: (a) indicate his or her readiness to help the team, (b) take time to genuinely understand the problem, and (c) be willing to accept responsibility on behalf of the team's effort. When we have seen the facilitator endorse the above three items, we have typically seen movement from *hibernation* to the next phase, that of *resolution*.

Resolution

If there is no action or resolution after the facilitator has become involved, both the team and the facilitator become frustrated. At this juncture of the *resolution* phase, consultants "prop up" the teams. What we suggest is that the consultants do the following: (a) talk to the facilitator, (b) talk to the team, and (c) talk to management. Consultants need to clarify and focus on the nature of the conflict on ideas not on people. After all, the conflict that is occurring over the probable completion of a given HIWT project is caused in most cases by competing time constraints and finite resources. The consultant's major role in "propping up the teams" is to lessen any personality conflicts that may be present and give overall encouragement for completion of the project.

The team presses on at this point. The team must recognize that the project can indeed expire at this critical moment. The team must reaffirm its position that it will not give up. A few things the team may now do include looking at a problem differently or utilizing a different approach for solving the problem. For example, a HIWT may communicate with another team in the plant on how they resolved a similar problem. Will this approach work in the current situation? Obviously adequate resources and support are essential, but they may not be sufficient in and of themselves. Good achievement may require adjustments to requirements of the next FY budget. The project may in fact have to be postponed for a year. Ultimately the current project will be completed and the team will already be initiating action on a new project. In most cases the new project will again have to move through the *initiation*, *hibernation*, and *resolution* phases.

Conclusion

What does this approach suggest to its various constituencies? managers? support staff? high involvement work teams? For one thing, it is highly pertinent for organizations if they truly want to adapt to changes in the organizational culture. Are people willing to provide more assistance along the way as teams undertake projects to help the company? Is there a sense of cooperation? Are individuals willing to sacrifice some of their personal goals for the good of the organization?

Although the model captures in a linear sense what is happening, should not organizations provide more feedback and become interactive? If HIWTs are to succeed, they don't always need to go through every step as indicated in the model in fact, they shouldn't. And what about achieving organizational outcomes - productivity, quality, group pride, and customer satisfaction? If organizations are truly to adapt and achieve these outputs, an understanding of the system that is portrayed in this model is a good initial step.

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A Systems Approach for Dysfunctional Teams

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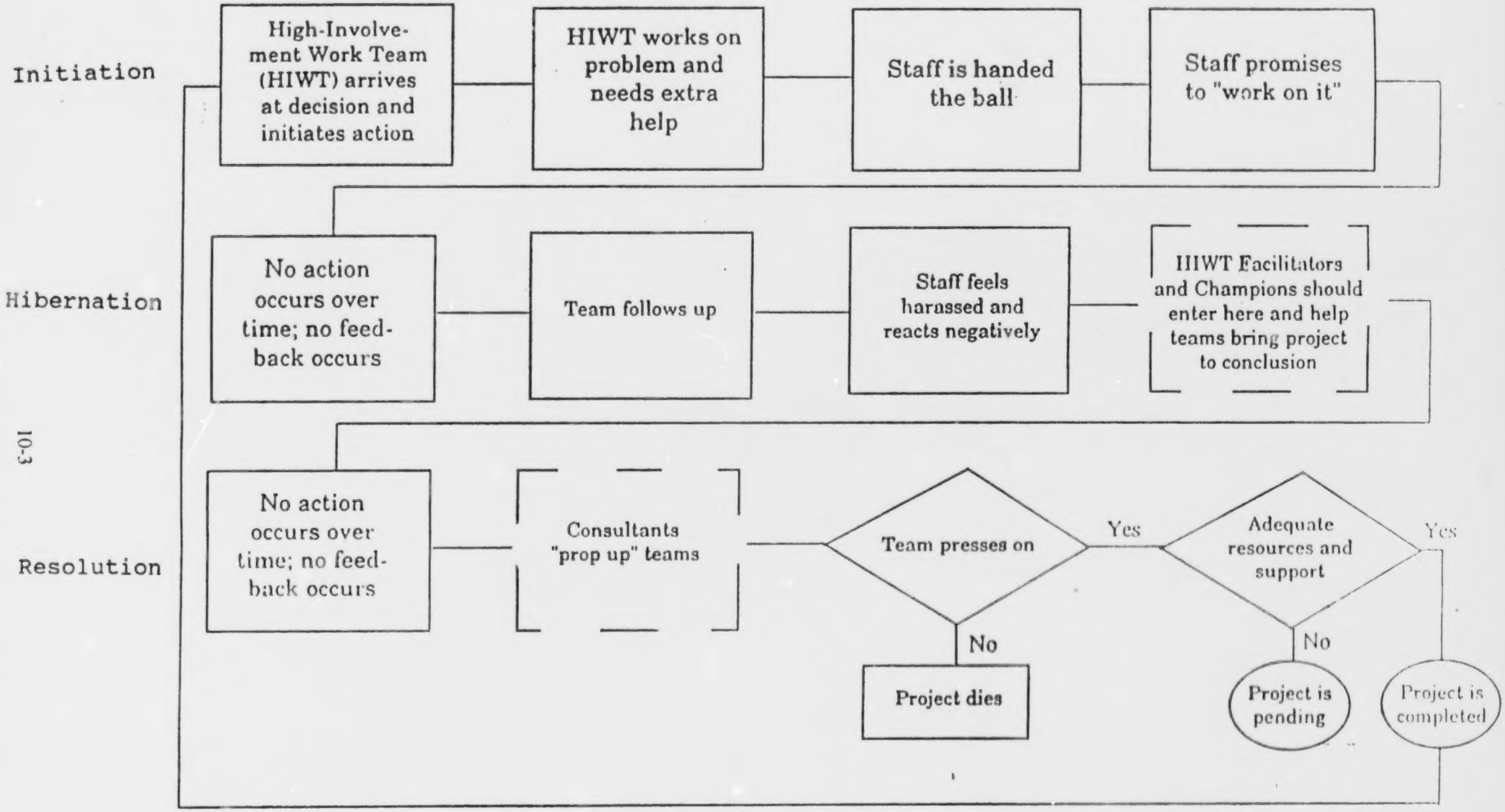
Initiation
High-Involvement Work Team (HIWT) arrives at decision and initiates action
HIWT works on problem and needs extra help
Staff is handed the ball
Staff promises to "work on it"
Hibernation
No action occurs over time; no feed-back occurs
Team follows up
Staff feels harassed and reacts negatively
HIWT Facilitators and Champions should enter here and help teams bring project to conclusion
Resolution
No action occurs over time; no feed-back occurs
Consultants "prop up" teams
Team presses on
Yes
No
Project dies
Adequate resources and support
Yes
No
Project is pending
Project is completed

The Myth of Self-directed Work Teams And The Ineffectiveness of Team Effectiveness Training: An Argument With Special Reference To Teams That Produce Knowledge

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The purpose of this paper is to argue that the notion of self-directed teams is a myth that is part of the dominant cultural pattern of competitive individualism in the United States. I additionally argue that the failure of many teams to achieve their objectives is wrongly addressed by team-building interventions. Focusing on knowledge producing teams in particular and drawing on research data, I will argue that team boundaries are so permeable and team membership so fluid that teams cannot help but reproduce the culture of the parent organization which in turn reproduces the dominant cultural patterns within the United States. The most important of these patterns as it effects teamwork is competitive individualism. Team-building interventions which wrongly problematize team members focus on personal awareness and group interaction skills while ignoring the organizational context which not only directs team task and implementation, but reproduces competitive individualism among team members. Although these interventions may temporarily introduce countercultural behavior such as trust among team members and promote the illusion of team goals, they do not address the influence of the dominant culture of the parent organization on team functioning.

Team Learning

The team learning process is one of working with information.

Recent grounded theory research has suggested that team learning can be functionally defined in terms of the knowledge production process: the gathering, sharing, and recombining of information, and its dissemination as new knowledge (Brooks, 1994). Similarly, from the field of psychology, Larson and Christensen (1993) define social cognition as social processes that relate to the acquisition, storage, transmission, manipulation, and use of information for the purpose of creating a group-level intellectual product. Although increasing numbers of Americans work with knowledge and knowledge appears to benefit from multiple contributors, very little research has been done on the process of group knowledge production. The few existing studies indicate that team learning includes many of the same processes individual learners use (Dechant, Marsick, & Kasl, 1993), information transfer is important (Ancona & Caldwell, 1990; Allen, 1984; Kraut, Egido and Galegher, 1990; Pelz & Andrews, 1966; Cicourel, 1987, 1990; Austin & Baldwin, 1991) and that an open and interactive climate seems essential to the process (Cicourel, 1990).

Power inequalities negatively influence the process of dealing with information.

Most recently, Brooks (1994) has suggested that formal and informal power inequalities among team members negatively influence the knowledge production process by limiting the participation of those with limited power (Brooks, 1994). This study of four teams in a research and development lab suggested that patterns in the organization's culture made it difficult for team members to gather, share, and work with information, and to disseminate new knowledge to others in the organization. In essence, contrary to the belief imbedded in the use of teams as a structural way to transform organizations so that they are flatter and more participative, the teams in this study reproduced the formal and informal hierarchical structure and culture of the traditional organization. Engineers dominated the knowledge production process on the teams, as did white men. Non-professional and non-management workers participated comparatively less. Engineers served as the team leaders and dominated discourse on all four teams. These power inequalities appear to reproduce the hierarchical structure present in the parent organization and characteristic of the U.S. cultural patterns of competitive individualism and scientific rationalism.

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Self-Directed Teams And Team Effectiveness Training

The notion of self-directedness is based on the belief that teams constitute discrete and unitary identities. They do not. Instead their boundaries are permeable, their membership fluid, and their culture a reproduction of the parent organization.
An important, but faulty assumption supporting the notion of self-directed teams is that teams have unitary and distinct identities and clear boundaries separating them from their environments. However, a close look at the teams I studied showed team members joining and dropping out on a regular basis; a lack of clarity about the purpose of the team; a lessening of team identity outside of the team meetings; and outside events profoundly influencing both the teams' purposes how team members interact with each other. This suggests that teams are so integrated with their organizational context, they inevitably reflect the culture and structure of that organization. If the organization is predominantly hierarchical, teams reproduce that hierarchy. If the organization excludes members of certain groups from full participation, the teams reproduce that behavior. This is not to preclude the resistance of certain individuals and groups to aspects of the predominant culture. However, it is to say that teams are so enveloped and colonized by the culture of the parent organization that they are incapable, except by an act of resistance, of doing anything but reproducing the culture of the organization. It is also to say that the type of education implicit in team training does not provide appropriate and useful tools to resist that culture. Teams, although part of the picture of what a transformed organization might look like, cannot within the current structure and culture of most organizations act counterculturally. They cannot be used to spearhead a transformational effort in organizations.

Team training assumes that the difficulties teams have in the U.S. are the result of team member skill deficits. This oversimplifies the complexity of teamwork in specific organizational contexts.
Prevalent in the practice and research literature about teams is the belief that team performance improves when the team competency of individual team members improves. An enormous body of research, literature, training packages and consultancies is part of a team-building industry based on this assumption. However, this view of teams problematizes team members. This problematizing is similar to the deficit model in public education that identifies certain individuals as "at risk" and then sets them aside for special treatment intended to "fix" them so as to have a better chance of success in the current public school system. This approach is based on the notion that a single definition exists for success and that all people, in order to be successful, need to conform to a specific set of standards. In the workplace, this approach fails to place value on individual talents that fall outside of the standard definition of qualities associated with success. In the Brooks study of four research and development teams, the most productive team in terms of both technical and social knowledge had had no team training as a group and was notable for its lack of traditional team skills (1994). The team included no managers or engineers and only the leader had any college education at all. It included a preponderance of shift workers. What did seem to distinguish the team was that team members believed that the work they were doing together was going to make an important contribution to the organization.

Teams are assumed to have a clear ideological mandate within organizations. They do not. Rather, organizations are a site of competing discourses and conflicting practices regarding teamwork.
It is through an understanding of teams from a cultural perspective that we can begin to understand the contradictions and paradoxes teams and team members encounter working in many of today's organizations. One can understand organizations as a panoply of competing discourses, many embodied in current buzzwords in management literature and providing the marketing edge for management training seminars. For example, today's managers are being taught to work on teams - a collective activity - while at the same time learning to manage their own careers - an individualistic activity. More subtly, there is the official discourse which eulogizes the pursuit of quality through teamwork, while the behavioral text of who gets promoted is often one of membership in an old boy network. The discourse of managing one's own career disguises the more terrifying discourse euphemistically called "downsizing" or "re-engineering," but understood by all as layoffs and firings. Finally, there is the attempt to integrate re-engineering with its radical elimination of nonproductive units with the quality-oriented and frequently time demanding efforts of teams working within the discourse of Total Quality Management.

These discourses often seem to contradict each other and to demand conflicting behaviors from the same employee. They are the product of a proliferating industry of management consultants and literature whose fundamental premise is that organizational culture can be controlled and changed through the use by managers of appropriate and effective change methodologies. These methodologies range from radical high control methodologies such as re-engineering reflecting cultural patterns of competitive individualism and scientific rationalism, to more participative methodologies such as Total Quality Management that take a more consciously countercultural position by stressing incremental quality improvement by those individuals closest to the work being done. Regardless, the resulting and often competing discourses, each making a claim to radically transform the way things are done in the organization, drown out the traditional cultural patterns with a cultural confusion that leaves employees afraid and cynical about the organization. Particularly contradictory for teams are the discourses and organizational structures and policies about competitive individualism versus cooperation, short-term financial returns versus quality improvement, and control and accountability versus participation and risktaking.

The Problem For Knowledge Producing Teams

For teams that produce knowledge, these conflicts are further complicated by an outmoded view of knowledge which oversimplifies the interrelationship between technical and social knowledge.

While all teams work within the kinds of paradoxes noted above, teams with the explicit purpose of producing knowledge struggle with a set of paradoxes best expressed in the following description of the modernist - post modernist controversy over the nature of knowledge:

> "The modernist belief is that knowledge can be scientifically studied and analyzed. The use of objective evidence forms the foundation for what modernists accept or reject. The postmodern world, however, is one that rejects the positivist definition of "objectivity" or that one singular "truth" exists that awaits to be discovered. Rather than a Durkheimian concept of reality that synthesizes knowledge and people to abstract norms, postmodernists focus on difference and conflict where competing interpretations of reality are inevitable. Thus, the researcher's task is not to discover the "true" interpretation, for none exists; instead the challenge is to uncover the multiple voices at work in society that have been silenced" (Tierney, 1994, 99).

In other words, postmodernism challenges the existence of an objective technical knowledge. Such a challenge should cause companies that base their success on the continual development of new technical knowledge to sit up and take notice. What would be the implications if the boundaries between technical and social knowledge were blurred?

Intel's experience with producing and marketing the Pentium chip provides an example of how technical and social knowledge are interwoven.

The case of Intel's recent difficulty with the Pentium chip provides an example of how technical and social knowledge are interwoven in ways that profoundly affect the company's financial success. An analysis in the December 17, 1994 Economist stated that the problem with the Pentium chip was not one of faulty engineering (the level of mathematical error in the chip was acceptable for the purposes of most PC users), but of a marketing campaign. Intel spent $150 million on what the Economist described as

> "two ambitious leaps in marketing, both unprecedented in an industry where chips were considered to be components whose make was of interest to manufacturers, not customers. First, it advertised its own name, with the ubiquitous "Intel Inside" campaign. Then, it went a step further and launched an $80 million campaign to promote the Pentium itself, hoping to speed the market's acceptance of the new chip. It was largely thanks to this campaign that the Pentium's flaws became newsworthy" (p65).

Ironically, the fault with the Pentium was apparently not significant and was quickly repaired. Intel estimated that a single user would stumble across two numbers that cause the division problem only once every 27,000 years. However, IBM argues that some users might encounter an error once a month and announced it would halt shipments of Pentium PCs. Other computer manufacturers, such as Dell, continue to sell Pentium-PCs on the grounds that as Intel claims, this is not a problem the average computer user needs to worry about. The Economist analysis continues:

> "Rather than dismiss the Pentium problem as unimportant to most users, Intel should have promptly released a cure, either a software program that would work around the problem or a more generous recall programme (currently, the company will replace a chip only if you claim loudly that you are at risk of being affected by the error). It should also have been less hyperbolic in trying to diminish the problem's significance; regardless of which is right, once every 27,000 years sounds unconvincing next to IBM's estimates of monthly troubles. And all these questions still lead back to the broader issue: should Intel have hyped its brand to the consumer at all?"

Although little discussion appears to be occurring in organizations themselves about the nature of knowledge, the Pentium case exemplifies how knowledge can no longer be thought of as a single technical narrative, but a site of competing interpretations of technical reality interwoven with social reality

Thus, whether or not a chip can be considered "acceptable" is not just a technical question, but a social one, as well. If Intel had not hyped its brand to the consumer, a slightly flawed chip would have been acceptable, as Dell concluded. When we begin to consider the exigencies of context, we have entered the realm of social knowledge. Thus, in this example, technical knowledge is intimately married to social knowledge and as interpretive social science has taught us, social knowledge is open to interpretation. In a postmodern era, the possibilities for different interpretations are multiple, and each of these interpretations reflects the positioning of the interpreter. Unfortunately, we have become accustomed to searching for and accepting a single grand truth and uncomfortable with the possibility of a more complex, unpredictable and multifaceted reality. When a single grand truth is allowed to dominate, it is the interpretation of the person or group who command the most formal and informal power. In other words, a single grand truth inadequately represents reality and when one truth prevails in public, it is usually the truth as seen by those who command the most formal and informal power. Although a single interpretation is allowed to dominate as truth, other interpretations do not just disappear, but remain silent, acting as sources of alienation for those who were not heard. This is a serious problem in terms of team effectiveness, and in terms of knowledge production, valuable information is lost to the process.

Discussion And Implications For A Knowledge And Information Society

Knowledge production benefits from a rich exchange of information and interpretation.

Teams that produce knowledge, even technical knowledge, are seriously disadvantaged when the knowledge production process is an exclusive one. In particular, hierarchical organizations are disadvantaged when the perspectives of those with low formal or informal power are excluded from the conversation. In hierarchical organizations in which the dominant cultural patterns are competitive individualism and scientific rationalism, team members are incapable, except by acts of cultural resistance, to interact with each other in ways different from those characteristic of the cultural patterns of the parent organization. This means that members with low formal or informal power lack value in the eyes of more powerful team members and are able to contribute less to the knowledge production process than their more powerful team mates. If we understand knowledge, even strictly technical knowledge, to involve interpretations of reality, and we understand the inextricability of technical and social knowledge, then our work as knowledge producers can only be enhanced by the illumination of as many interpretations of reality as available. Since our own interpretation can only reflect our own position and history, it is to our own advantage that we seek out and try to understand the interpretations of others.

Work with information is severely constrained by power inequalities among workers.

At some level as a nation, we seem to have understood this. Our attempts to utilize cross-functional teams and to move organizations to team-based structures attest to this. However, we seem to have underestimated the profound impact of the parent organization's structure and culture on the functioning of teams. We seemed to have believed that with a little training, teams would be able to function effectively. We did not consider that the very act of successfully functioning as team members would be countercultural or at odds with the dominant culture in several ways: (a) full participation of all members in the team dialogue is at odds with participation according to position in the formal and informal hierarchy of the organization; (b) team compensation is at odds with the individually-based compensation still existing in most organizations; (c) workers' control over their own movement and use of time is at odds with the tight control held by most supervisors accountable to their managers in hierarchical organizations; (d) easy access to information throughout the organization is at odds with access only to information within the workers' immediate scope of work; and (e) respect for experience-based knowledge is at odds with an over-valuation of professional knowledge.

If this is true, then what should we do?

Since teams are countercultural to the dominant cultural patterns in the United States in the late 20th Century, we must think about their use as an attempt to transform the nations' traditionally dominant culture. How is it that culture can be transformed? The way that is typically used in organizations is for top level management to decide what that culture should look like and to initiate an appropriate series of structural and cultural changes in the organization. The attempt to institute teams as the primary unit of work and management is just such a change.

However, culture is the collective construction of its members. To change culture requires not for top leaders to issue an edict, but for those who are members of the culture to come to a new understanding of how things work. This occurs over many years and top leadership is only a part of the process, not in control of it. There are two ways that seem likely to result in a changed collective understanding of how things work. One is for multiple conversations or dialogues to occur which include diverse and competing interpretations. The result of these is not intended to be a consensus but rather an enhanced understanding of the experiences of those who constitute a culture's membership. These conversations or dialogues can occur anywhere in organizations, but their success is predicated on contribution of diverse perspectives. There is no normative goal for these dialogues since what emerges cannot be predicted. Although these dialogues are educational in nature, they are not intended to educate in the sense of teaching the norms, values, and content knowledge of the existing culture. Like education at its best, they can occur anywhere. Anyone who seeks to educate can sponsor an environment in which such exchanges can occur. The other way that we can begin to change our collective understanding of how things work is to develop a critical awareness of the dominant culture in which we live. This does not mean learning the culture as a universal given, but learning the ways in which our thought and actions are a product of that culture. Both dialogue and critique suggest educational directions capable of helping in the collective transformation of culture. They stand in contrast to the overly simplistic and mechanistic interventions of mandated teamwork and traditional team effectiveness training.

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Successful Teams, But at What Level? An Evaluation Model of Team Success at an International High Technology Firm

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With the continued expansion of teams in organizations, we are still puzzled as to why some succeed and others fail. Evaluating team success is difficult, however, if key stakeholders disagree on the definition of success. This study examines how different stakeholders within an organization define success. Eight teams and their managers participated in a case study. From a comparison of team success literature and each group's perception of success, a team success model was developed.

American organizations continue to move to team-driven cultures. In fact, the excitement for developing team approaches to work is so strong that it might be considered a fad in modern management philosophy (Stevens & Campion, 1994). In a survey conducted by the Association for Quality and Participation, forty-seven percent of the managers who responded indicated that more than half of their workforce will be organized into self-directed work teams within the next five years (Verespej, 1990). Money, time, and effort go into training and building systems to encourage team success, yet many organizations still struggle to make teams succeed.

One of the major reasons organizations adopt team-based approaches to decision making is the empowering effect it has on employees. Writers often propose that team involvement in decision making increases commitment and improves quality, yet team research results are mixed. Some reviews state that there is little empirical evidence on the overall effectiveness of team-based work programs (Kahnweiler, 1991). Others cite studies that contradict or refute previous findings on team effectiveness (Kanekar, 1983). Successful work teams have been able to reduce costs, improve quality, improve morale, and respond effectively to customer needs (Beer, Eisenstat, & Spector, 1990). Wagner and Gooding (1987), however, found that teams had only a modest influence on performance, decision making, motivation, member satisfaction and acceptance. In a review of the team development research, May and Schwoerer (1994) concluded that there was a correlation between teams and improved attitudes but found less support that team structures actually improve performance. Lawler (1986) argues that work teams are not always the best approach for completing a task. This may be why some organizations' team initiatives fail.

Part of the problem may also be due to a lack of congruency in how organizations and key stakeholders define success and factors that enable team effectiveness. Stakeholder groups include team members, their supervisors, their direct line managers and anyone else that has a stake in the results of the team process. It is conceivable that each of these groups may have a different perception of what constitutes success. It is difficult to evaluate team success if everyone is approaching the evaluation from different frames of reference. Therefore, the stakeholders need to understand and agree on factors that define a successful team (Goodman, Atkin, & Ravlin, 1982).

Many researchers and organizational specialists have attempted to develop the perfect recipe for an effective or successful team. Yet the exact formula still eludes them. Comprehensive models for group effectiveness have been developed (Gladstein, 1984, May & Schwoerer, 1994; Sundstrom, De Meuse, & Futrell, 1990), as well as taxonomies outlining essential knowledge, skills and abilities of team members (Stevens & Campion, 1994). Factors critical to team success often cited in the literature typically fall into the following categories: organizational and

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management support, systems support, team structure and process, individual characteristics, and interpersonal competence.

Organizational and Management Support

The literature often cites organizational and management support as major factors in team success (Berrey Avergun, & Russ-Eft, 1993). Blanchard (1990) believes an organization's commitment of time, resources, and training drives team effectiveness. Several writers posit that success is dependent on the organization's ability to create a clear vision and mission, and then align the teams' missions and goals with the organization's mission and goals (Arajs, 1991; Merron, 1994). Others credit success to management's commitment to high employee involvement, and their ability to remove barriers to employee involvement and team empowerment (Arajs, 1991; Bergstrom, 1994; Giordan & Ahern, 1994; Green & Hatch, 1990).

Effective organizational communication is also a major factor in team success. Management needs to foster an atmosphere of open and effective communication throughout the organization (Green & Hatch, 1990). Teams need access to data necessary for accurate decision making (May & Schwoerer, 1994). Mink, Mink, and Owen (1987) advocate that open organizations allow information to flow freely. This information exchange is critical in building trust, and trust is an essential component of team success.

The literature stresses the manager's role as coach in encouraging and supporting creativity, risk-taking and learning (Ashley, 1993; Barton, 1991; Berg, 1991; Blanchard, 1990; Coe, 1992; Davis, Corbin, Stabler, & Weller, 1992; Deeprose, 1992). Bushe and Johnson (1989) posit that managers need to make sure team members view their role as important. Several writers postulate that managers need to have good communication skills and strong interpersonal skills (Ashley, 1993; Klassen, 1993; Lewis, 1993; McClure & Werther, 1993). Ashley (1993) proposes that a manager's nontechnical skills including leadership, communication, and interpersonal relationships are important components in team success. He found these skills particularly difficult for engineers transitioning into supervisory roles. He outlined the following management skills as critical to team success: (1) coaching for optimal performance, (2) increasing individual productivity through teamwork, (3) running interference and interfacing with the organization, and (4) facilitating self-management within the team. Manz and Sims (1987) suggest that managers encourage their teams to become self-managing through self-observation and self-evaluation. Still other writers theorize that there is no one right style of leadership, but that the leaders should take a more situational approach. Barry (1991) argues that teams at different stages of development need different types of leadership. These types of leadership include envisioning, organizing, spanning outside the group, and social development of the team.

Systems Support

The literature also emphasizes the need to implement support systems that encourage and promote the team development (Sorohan, 1994). In their model of team effectiveness, May and Schwoerer (1994) propose that two systems affect team success. They stress that organizations need to provide education and training that incorporates job-related simulations and controlled feedback. They also urge organizations to adopt reward systems that compensate for skills members acquire. Hackman (1986) agrees that team effectiveness depends on an organizational context that supports competent teamwork through rewards, education, and information. Several writers support team compensation systems such as multi-skilling or skill-based pay (Denton, 1992; Dobbelaere & Goeppinger, 1993, May & Schwoerer, 1994). Other systems potentially affecting team effectiveness include: reward and recognition systems (Ball, 1993; Blanchard, 1990; Green & Hatch, 1990; Hackman, 1986, May & Schwoerer, 1994; Sundstrom, et. al., 1990), and team involvement in member selection, scheduling, and evaluation (Barton, 1991; Dobbelaere & Goeppinger, 1993; Ferris, 1991).

Team Structure and Team Process

Team process and structure also impact team success (Gladstein, 1984, Katz, 1982). Gladstein postulates that group structure, such as group size, group norms, member roles and goal clarity, indirectly influence team effectiveness. She defines group process as "the intragroup and intergroup actions that transform resources into a product" (Gladstein, 1984, p. 500). Hackman (1986) also posits that effective teams have a clear and engaging direction, and a structure that enables competent work.

Having the right skill mix on the team may also facilitate team effectiveness (Bushe & Johnson, 1989). In a study of cross-functional change teams, Katzenbach and Smith (1993) discovered that successful teams tended to have adequate levels of complementary skills. Pearce and Ravlin (1987) attribute team success to team member heterogeneity. Some organizations use screening processes to develop teams. They look for cooperative interpersonal behaviors, dependability, integrity, and the right technical skills (Flynn, McCombs, & Elloy, 1990). Recent work indicates that personality-based selection systems may be capable of having some modest effect on success (McClure & Werther, 1993). Harris and Harris (1990) posit that team success increases when team members understand multiple team roles. Several organizations have improved the morale and efficiency of teams by cross-training employees (Denton, 1992; Scott & Townsend, 1994).

A clear compelling mission or purpose is an integral factor in team effectiveness (Gladstein, 1984; Hackman, 1987; Koller, 1989; Sundstrom, et al, 1990). Katzenbach and Smith (1993) note that effective teams take time developing a purpose and then translating that purpose into specific performance goals. Goals need to be challenging but not unattainable (Stevens & Campion, 1994). All team members should understand and commit to team goals (Francis & Young, 1979; Imundo, D'O'Brian, Williams, & Milite, 1992; Lawson & LaFasto, 1989).

Often, the main function of a work team is to solve problems. Therefore, to be effective, team members should be able to identify problems, ensure that all members' ideas are considered, utilize problem solving principles, and adopt solutions that are supported by concrete reasoning (Stevens & Campion, 1994). Hackman (1986) suggests that members of mature teams take personal responsibility for their results, monitor their performance and progress though feedback, take corrective action if needed, and actively seek assistance and guidance from the organization. Teams also need to develop an open, supportive atmosphere where creative problem solving, risk taking, and learning can flourish (Francis & Young, 1979; Imundo, et. al., 1992; Koller, 1989).

Individual Characteristics and Interpersonal Competence

The effectiveness of a team depends heavily on its members' level of maturity and interpersonal competence (Gooley, 1993; Nurick, 1993). The team success literature emphasizes several individual factors that impact team success. Technical or functional expertise is frequently mentioned (Gooley, 1993; Koller, 1989). Ferris (1991) identified individual and group characteristics that play a major role in team success. Individual characteristics included dependability, interpersonal skills, self-motivation, and integrity. Group characteristics identified were leadership potential, assertiveness, participation, and the ability to cope with role ambiguity.

Team effectiveness also depends on team members' ability to successfully handle interpersonal relations. Stevens and Campion (1994) identified three levels of interpersonal knowledge, skills, and abilities that promote team effectiveness: (1) conflict resolution; (2) collaborative problem solving; and (3) communication. Other important characteristics include member participation, commitment, and accountability (Gooley, 1993; Koller, 1989; Scott & Townsend, 1994). Gooley (1993) posits that teams are more effective when members share responsibilities and duties, believe in one another, and share commitment. Mink, Mink, and Owen (1987) outline five norms that facilitate team development: (1) developing trust, (2) accepting and recognizing individual differences, (3) giving and receiving feedback, (4) problem solving, and (5) letting go of the past.

Effective team communication is characterized by team members' willingness to be open and receptive to information, ideas, and feelings of others (Campion, Medsker & Higgs, 1993; Gladstein, 1984; Pearce & Ravlin, 1987; Stevens & Campion, 1994). Therefore, team members need to communicate openly and supportively, listen actively and nonjudgementally, and understand and interpret nonverbal messages (Stevens & Campion, 1994).

Many problems arise when organizations try to bring a group of people together who have a wide range of personalities, expectations, experiences, and knowledge to create a team (Caudron, 1994). Conflict is a fact of group experience. Personnel and personality conflicts frequently hinder team development (Manz, Keating, & Donnellon, 1990; Verespej, 1990). Therefore, team members' willingness and ability to resolve personal conflict is crucial to team success (Hequet, 1994; McClure & Werther; Nixon, 1993; Nurick, 1993). McClure and Werther (1993) found that interventions based on personality assisted teams in identifying and resolving personality-based barriers by improving interpersonal communication and team building.

There is extensive literature on team success factors available to organizations transitioning to a team-based culture. Many of the factors identified overlap or complement each other. There is a wide array of consultants offering different approaches to team development. Some skills taught are standard team skills, but different consultants may focus on different skills or approaches. These differences may influence an organization's perception of success factors. Therefore the problem this study addresses is that there is no consistent definition of success factors for teams. When evaluating the success of teams, it is critical that key stakeholders in the organization have a clear and common understanding of team success factors. This study will examine how key stakeholders in an organization define success. It will also look at enablers and constraints to team success.

Participants

The study took place in three separate manufacturing units of a high technology firm. All of the units are located in the same city. The manufacturing units are open twenty-four hours a day, seven days a week. For the last several years, the organization has been shifting from a more traditional management-led culture to a team-based culture. Most of the non-exempt employees in the manufacturing units have attended an extensive team skills workshop. Many of the managers also have attended. Some managers have been through an intensive team skills class. Others have not yet attended.

The teams were intact work units. The team makeup included the supervisor, or in some instances the manager, and their direct reports. Most of the teams include support staff and engineers. Different teams performed different functions in the manufacturing process. Therefore, team size and makeup varied.

Methodology

Since this study was designed to examine team success from the participants' points of view, a qualitative case study design was used. Bromley (1986) postulates that case studies "get as close to the subject of interest as they possibly can, partly by means of direct observation in natural settings, partly by their access to subjective factors (thoughts, feelings, and desires)" (p.23). A qualitative case study is a "holistic description and analysis of a bounded phenomenon such as a program, a process, a person or a social unit. Its purpose is to reach a comprehensive understanding of the groups being studied and to develop general theoretical statements about patterns occurring in their structure and processes" (Becker, 1968, p. 233).

This study utilized a four-step qualitative case study. The four steps included: (1) determining factors that characterize a successful team; (2) selecting a case study sample; (3) collecting data; and (4) analyzing data.

Determining Factors that Characterize a Successful Team A preliminary understanding of team success factors is critical in framing this case study. Therefore, the first step involved searching relevant team success literature. A thorough understanding of previous research and theory and current practices in the field assisted in conceptualizing the problem, conducting the study, and interpreting the findings.

To gather preliminary data, an open-ended questionnaire was sent to all first line managers in the manufacturing units and members of twenty-two intact teams asking them to define the characteristics of a successful team. Over sixty percent of the questionnaires were returned. This data was compared to relevant team success literature and the organization's team award criteria. A comparison chart was constructed indicating similarities and differences between the literature, the managers' perspectives of success, and team members' perspectives of success.

Selecting a Case Study Sample Through a stratified purposeful sample, eight teams were selected to participate in the case study. Stratified purposeful samples are used to study above average, average, and below average cases. As Patton (1990) writes, "The purpose of a stratified purposeful sample is to capture major variations rather than to identify a common core, although the latter may also emerge in the analysis" (p.174).

Training coordinators and team facilitators identified three teams in each manufacturing unit: one mature team perceived as "successful," one younger or newer team perceived as "successful" or as a "rising star," and one mature team perceived as "struggling" or "not yet achieving success". Predetermined criteria or success categories were not offered since one objective of this study is to determine and compare different stakeholders' perceptions of team success factors. Therefore, anyone identifying a "successful" or a "struggling" team was asked to explain their criteria for the selection.

Data Collection Data collection procedures included observations of team meetings and interviews with team members, supervisors and managers. Observations spanned over several months and focused on specific behaviors, interactions and patterns. A behavioral checklist was developed and tested for instrument validity and observer rater reliability. Observers attended four team meetings for each team identified.

After completing the observations, interviews were scheduled with team members, their supervisor, and their first and second level managers. A standardized open-ended interview format was used.

Data Analysis A cross-case inductive analysis elucidated common themes or categories of success factors. This evolved into a three-tier team success model. The model, shown in Figure 1, outlines the three success levels and specific identifying characteristics of each level. It is important to understand that the emphasis of qualitative data analysis is on "illumination, understanding, and extrapolation rather than causal determination, prediction, and generalization" (Patton, 1990, p. 424). Therefore, this study provides a holistic snapshot of work teams and their perceptions at the time of the study.

The Team Success Model

The comparisons of team success literature, managers' perceptions of team success factors, and team members' perceptions of team success factors led to the development of a team success model. The model depicts three levels of team success: (1) the individual and interpersonal level, (2) the team process level, and (3) the management and systems support level.

Level 1 Individual and Interpersonal Success Factors The individual and interpersonal level included success factors related to individual team member characteristics and their ability to relate interpersonally. The individual and interpersonal characteristics mentioned most

Figure 1. Levels of Team Success

LEVEL 3 - SUPPORT

MANAGEMENT

Action support their words
Follow-through on commitments
Full empowerment -
Gives responsibility & authority
Actively supports team
Effective interpersonal skills
Open and willing to change
Values everyone's contributions
regardless of level/title

SYSTEMS

Permeable boundaries
Monetary team rewards
Consistent delivery of rewards
Team selects & reviews team members
Team structure maximizes individual
needs, personality, potential, and desires.

LEVEL 2 TEAM PROCESS

Well defined boundaries
A clear focus on mission
Specific goals
Like each other & have fun
Keep meetings on track

Handle problems as they arise
Strong group facilitation skills
Uses meeting ground rules
Draw information from each other
Know how fit into the organization

LEVEL 1 INDIVIDUAL / INTERPERSONAL

Confronts conflict and is open to working it out
Supports other team members and team goals
Understands and resects individual differences
Flexible - open and willing to change
Open honest communication

frequently were: cooperation, team member support, open and honest communication, and team member commitment. Participants felt that a team member should be able to commit 100 percent, both to the team and to the job. They should also be willing to address conflict within the team.

Level 2 Team Process Factors Team process factors include the team structure and any skills team members use in the process of getting their job done. Specific skills identified as important were effective meeting management skills, facilitation skills, and problem solving skills. Teams should be structured so they have well-defined boundaries. They should understand how much power they have over decisions about their job. The team should also have a clear mission and specific goals to guide their process. They should know how their team fits into the organization's strategic plan. Team members should develop their own ground rules and use them in their meetings.

Level 3 Support Factors The support level is divided into management support and systems support. Many of the study participants had negative experiences with upper management in the past, possibly influencing their responses. Therefore, the management support characteristics identified most often were following through on commitments and making their actions match the words they espouse. Managers should be willing to change management styles and give teams full empowerment. Team members believed that a team could not succeed it they were given responsibility but were not given the authority to carry it out. Managers should also exhibit effective interpersonal skills. They should communicate openly and honestly, listen and try to understand other's viewpoints, and value everyone's contributions regardless of their title or level in the organization.

System support factors include any systems or policies that would facilitate or hinder team effectiveness. Many organizational systems create barriers to team success (Sorohan, 1994). Case study participants stated that intergroup conflict and competition were major problems. They blamed these problems on the organization's structure and divisions within the structure. Accordingly, they felt that successful teams would have permeable boundaries allowing communication and sharing between work groups. The only other system support factor that seemed important to the participants was the need to have a monetary team reward system that encourages cooperation instead of competition.

Discussion

A team may be perceived as successful at one level or any combination of levels depending on how the stakeholder group defines success factors. One stakeholder group may perceive a team as successful at the same time another stakeholder group perceives it as struggling. This may be the result of their different perceptions of success. For example, the manager may view the team as unsuccessful because they are struggling with the problem-solving process and are slow to produce results. The team members, however, believe they are successful because they have overcome interpersonal conflicts and are now better able to focus on the task. The team was successful at the individual and interpersonal level but not at the team process level. The manager's perception of the team could negatively affect them if the team is not recognized for the success they achieved. The team may now move forward in process level skills since interpersonal conflicts were resolved.

In looking at similarities and differences between the literature on team success factors and stakeholders' perception of successful teams, it appears that the stakeholder groups identified many of the same factors discussed in the literature. The major difference between each stakeholder group's definition of success is the category each emphasized. From the responses, it would appear that managers place the greatest degree of importance on team process skills. This may reflect skills that were emphasized in training. Most of the managers had been through team skills training and many had attended facilitator training. Managers also placed a high degree of importance on management and organizational support. The ability to use specific problem solving processes did not seem to be as important to teams. The case study teams rarely used the problem solving techniques and tools learned in training. All of the organization's stakeholders stressed the importance of meeting management skills which was only minimally mentioned in the literature. The case study results supported the stakeholders' views. All observed teams consistently used agendas, kept team minutes, and took on such roles as facilitator and scribe.

Although the literature emphasized system support, the stakeholders only mentioned a few system support factors. The only one identified by both managers and team members was the need to have more permeable boundaries between work groups in different parts of the organization. Managers also mentioned team reward systems and peer review evaluations.

According to the literature and the stakeholder groups, team communication is an important success factor. Managers, however, stressed the importance of the team's communication with management. Team members stressed the importance of lateral or cross-shift communication.

The greatest difference among stakeholders' perceptions of success is the emphasis teams placed on individual and interpersonal factors such as cooperation, commitment and communication. Case studies validated this concern. Many teams are still struggling at the individual and interpersonal level. It is also difficult for them to use the process skills learned in training if there is no trust among team members. It is difficult for teams to succeed at the team process level, if they are unable to communicate about their concerns or resolve interpersonal conflicts.

This has implications on the team success model. Although each of the three levels impact team success, success at one level may be contingent on success at another. It is difficult for these teams to move to a higher maturity state when individual team members are unable to get along. Therefore, teams that are most successful will most likely be successful at all three levels. However, teams can be successful at only one or two levels. Success at the individual and interpersonal level is critical. Success at other levels may not be sustained if the team is unable to work through issues that arise at this level.

Implications for Practice

What constitutes a successful team is slightly different for each of the stakeholder groups. This definition incongruency may be preventing the organization from accurately assessing the next steps needed in developing successful teams. Each stakeholders' definition needs to be taken into account. If a team is perceived as a failure by management's criteria but a success by their own criteria, the team members may experience confusion and disappointment. Also, teams may not realize that they need to change. It is imperative that key stakeholders are assessing success in the same terms, and that those terms are communicated to all stakeholders.

It is also important to realize that a team may be failing at one level of the model, but be highly successful at another. Team development interventions need to match the needs of the team. For example, if a team is struggling at the individual and interpersonal level, an intervention to improve their problem solving skills may have little impact on their effectiveness. The team success model may be used to facilitate team interventions. By having a more thorough understanding of the different levels of team success and factors that either enable or constrain success at each level, organizations can plan more appropriate interventions as they progress to a team-driven culture. The team success model that evolved from this study can also guide researchers in future studies on team success.

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The Status of Valuing and Managing Diversity in Fortune 500 Manufacturing and Fortune 500 Service Organizations: Perceptions of Top Human Resource Professionals

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This study established a broad definition of diversity that includes and goes beyond protected-class differences. Second, it established a rationale for going beyond discriminatory, reactive, legalistic, or nonsystemic approaches to dealing with workforce diversity. Third, it determined a list of common HR/HRD components, including types of differences on which organizations focus diversity efforts, diversity development interventions, and diversity performance measures. Finally, it examined business factors related to diversity development efforts.

Due to domestic workforce demographic changes, global competition, and a diverse marketplace, U.S. business and industrial organizations must optimize more effectively the productivity of an increasingly diverse workforce. Many organizations have begun the developmental work of educating and changing the perspectives and behaviors of employees at all levels to value and manage diversity as a business issue. To address productivity goals, many have begun efforts to improve management and development of diverse employees for more diverse organizational leadership.

Although the significance of the need to value and effectively manage a diverse workforce has been acknowledged, little research has yet been done to define diversity development more clearly as a business issue, determine the status of diversity programs/processes, or begin to measure and evaluate their effectiveness in a comprehensive, systematic, and objective manner.

Literature Review

In recent years, the demographics of the U.S. workforce reflect a change in the direction of increasing diversity (Johnston & Packer, 1987). Within the last decade, a number of large companies have responded to this increasing diversity with human resource development programs designed to "manage diversity" or "value differences" in the workplace (Beilinson, 1991; Cox, 1991; Geber, 1990; Jackson, 1991; Lamb, 1991; Purnell & Tervalon, 1991; Robinson, 1991; Sanders, 1991; Savoie, 1991; Thomas, 1990; Walker, 1991a, b).

According to Triandis, Kurowski, and Gelfand (1994), "dealing with diversity is not a novel issue for U.S. managers. What is novel about modern diversity is that managers will encounter diversity much more frequently and at higher levels both inside and outside their organizations" (p. 769). Thomas (1991) emphasized that diversity in itself is not new, but as a critical business issue it is new. He suggested that three trends converging almost simultaneously have increased its visibility and its salience as a critical factor in the United States workplace: (a) the increasingly competitive global market, (b) the increasingly diverse workforce demographics, and (c) the increasing disinclination of diverse workers to assimilate.

Many individuals involved in valuing and managing diversity efforts have indicated that their recommendations, programs, or processes go beyond compliance with the Equal Employment Opportunity and Affirmative Action Act (EEO/AA) to address bottom-line business issues (e. g., Cox, 1993; Cox & Blake, 1991; Elshult & Little, 1990; Morrison, 1992; Sabur, 1991; Thomas, 1986, 1990, 1991).

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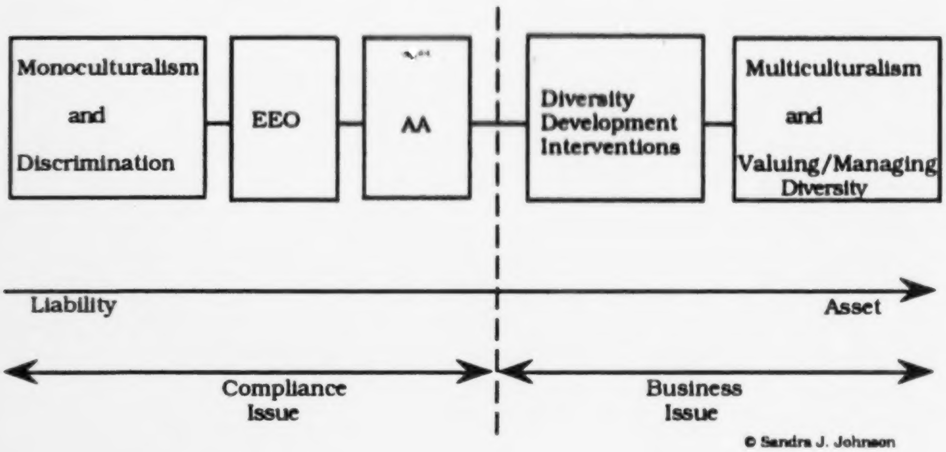
A number of companies have linked valuing diversity to increased productivity. However, there is little evidence that these statements are based on objectively measured bottom-line results rather than opinions or intuitive judgments. If valuing and managing diversity in the workplace is truly a business issue, then it would be important to know more about what it is, define it more clearly, and begin to measure and evaluate its effects in an objective manner. A descriptive research study would help to establish a baseline from which to proceed in this direction.

This study reviewed the literature in regard to the following topics: Diversity and Assimilation, Equal Employment Opportunity and Affirmative Action, Diversity as a Business Issue, Diversity as a Human Resource Management Issue, Diversity as a Human Resource Development Issue, and Diversity and Organizational Culture.

Taken from this review, Figure 1 summarizes the perceptions of the history and perspectives on U.S. workforce diversity and the need for a new approach that addresses current U.S. business realities. It conceptualizes the shift from viewing diversity as a liability and a compliance issue to viewing it as an asset and a business issue. Civil rights legislation set the stage; and environmental forces, such as increased workforce and customer diversity and global competition, are precursors that have pressured organizations to change their perspective on diversity.

Figure 1. Historical perspectives on diversity in U.S. business and industrial organizations


Monoculturalism and Discrimination
EEO
AA
Diversity Development Interventions
Multiculturalism and Valuing/Managing Diversity
Liability
Asset
Compliance Issue
Business Issue

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Study Design

The main research question for this study was: "What is the status of valuing and managing diversity in large United States business organizations?"

The purpose of the study was to determine the perceptions of top human resource (HR) professionals in Fortune 500 organizations in regard to the history, status, and definition of programs and processes for managing and valuing diversity in large U.S. business and industrial organizations, as well as to identify factors perceived to be associated with their effectiveness.

A survey questionnaire was designed to gather this information. The design of the survey instrument was based on a review of the diversity literature from human resource development (HRD) and related fields and on the conceptual models developed by the researcher from the literature. The instrument was content-validated by a panel of experts, and a pilot study was conducted with a random sample of Minnesota 100 companies.

Reliability was tested using a form of repeated measures. The same question was embedded in two different parts of the questionnaire to check for respondent consistency. It was also pretested with a class of HRD graduate students. A Pearson product moment correlation was calculated for both, which showed a strong positive relationship in each case (r = .87 for the pretest and r = .84 for the survey).

Data Collection The target population was the Fortune 500 Manufacturing and the Fortune 500 Service companies. A simple random sample of 100 Fortune 500 manufacturing companies and 100 Fortune 500 service companies was drawn, using a table of random numbers.

The final questionnaire was mailed to 100 top HR professionals in the Fortune 500 Manufacturing companies and to 100 top HR professionals in the Fortune 500 Service companies. All questionnaires were mailed at the same time. In addition to the questionnaire, the mailing included a cover letter, a preaddressed and stamped envelope for return mailing, and a summary request form.

The cover letter explained the purpose of the survey, emphasized the importance of the HR professional's assistance to the research, assured confidentiality, and offered to send respondents a summary copy of the results of the survey. The letter was typed on University of Minnesota Training and Development Research Center stationery, and the researcher personally signed each letter as a Research Associate of the University of Minnesota Training and Development Research Center.

Two follow-up mailings were sent to nonrespondents, each accompanied by a revised cover letter, another copy of the questionnaire, a preaddressed and stamped envelope, and a summary request form. A total of eighty responses was received by the researcher as a result of the three mailings, for a 40% response rate. Five unusable responses, for the purposes of this study, resulted in a final response rate of 37.5%.

Because survey response rates from business organizations tend to be low, a phone follow-up survey of a random sample of nonrespondents was planned and carried out to check for nonresponder bias. A comparison was also made between respondent companies' characteristics and manufacturing and service population characteristics, which showed some similar corporate demographics.

Results

The following are major findings of the research survey. They are organized according to the research objectives that guided the study.

Percentage of companies with formal diversity efforts Slightly less than half of all respondents (48%) were from service organizations, and slightly more than half (52%) were from manufacturing organizations. Forty-one percent of all respondents had developed a diversity effort, 35% were at some point in the planning stages, and 24% had no diversity effort. When viewed separately, the majority of organizations in both the manufacturing and the service sectors either already had a diversity effort or were in the planning stages (72% in the service sector and 80% in the manufacturing sector).

Common components of organizations' diversity efforts Of all organizations in both sectors together, 42% had a written diversity policy, 47% had a diversity training program, and 33% had an organization development (OD) effort for diversity.

Of the Fortune 500 companies that had a diversity effort, the greatest percentage of them reported race and gender (97%), age (90%), ethnicity (87%), physical disability (87%), and color (84%) as types of differences explicitly included as components of their efforts. Other types of differences included by approximately 60% to 70% of respondents were religion, language, and sexual orientation.

When asked which development efforts were used to support their organizations' diversity efforts, more than 80% of respondents reported cultural diversity awareness training (84%), training for managing diversity (83%), and training for valuing diversity (81%) as the most extensively used by their organizations.

Other development efforts reported by at least 70% of respondents were: team building (79%), training for continuous quality improvement (79%), management development training (79%), participative management training (74%), equal employment opportunity procedures (73%), interpersonal communication training (73%), career development (70%), and affirmative action procedures (70%). Small group dynamics training was reported by slightly more than half (54%)

of respondents. Lower-scoring development efforts used by less than 50% of responding organizations were: mentoring (39%), enhancing employee networking (39%), cross-cultural training (36%), and conflict management training (31%).

Organizational resources invested in diversity efforts Respondents reported on their organizations' investments of time and money in valuing and managing diversity programs/efforts. In regard to money spent on diversity training and development, amounts reported ranged from $6 to $1,000 per employee per year, with the average of $166. However, these figures represent less than one-third (29%) of the survey respondents.

More than two-thirds of the respondents with organizational diversity efforts were able to give an average annual number of hours of company time that employees spent in diversity training and development. The average per employee per year was 10.8 hours of company time. The number most often reported (mode) was 4 hours and the median was 8 hours.

Survey results also showed the percentage of employees who had been trained in diversity by percentage of companies with diversity efforts. In more than two-thirds (69%) of the organizations with diversity efforts, only 25% or less of their employees had received training or education through their diversity program/process. On the other hand, in slightly more than one-fourth (28%) of the organizations, more than half (51 to 100%) of their employees had received diversity training or education.

Management involvement More employees at supervisory through executive levels received diversity training than did those at nonexempt employee levels. This seems to reflect a strategy for getting top management's involvement, understanding, and support in diversity OD efforts. Survey respondents also reported that the highest levels of resource support and diversity-effort decision-making responsibility came from the management and executive levels of their organizations.

Factors that led to establishing diversity efforts Because valuing or managing diversity is a new approach to dealing with workplace diversity, it was somewhat surprising to discover that a high percentage of companies in the study had either a valuing or a managing diversity program or process, or were in the planning stages.

The study shows that most of this has come about since the Hudson Institute released the 1987 *Workforce 2000* report (Johnston & Packer, 1987) on the changing demographic trends in the U.S. workforce. The great majority (83%) of respondents with diversity efforts reported that their organization's diversity program or process had only come into existence within the last five years. It is probable that the diversity activities of the other 17% of companies, which reported diversity efforts of seven to fifteen years duration, were, at least in part, an outgrowth of equal employment opportunity and/or affirmative action programs.

Development of diversity programs or processes Eighty-seven percent of companies reported that they used in-house resources to develop their diversity programs or processes, and 77% reported using (outside) consultants. Obviously, many organizations used a combination of these two resources. Only 13% reported using packaged programs. The fact that most organizations used in-house resources could be related to their previous experience with EEO/AA efforts. If that is the case, it might interfere with viewing diversity as an asset and diversity development work as a business issue.

Was diversity a business issue? To what degree was valuing and managing diversity perceived to be a business issue? When asked to indicate their level of agreement with the statement--"In our organization, valuing or managing diversity is a bottom line issue"--40% of respondents agreed or strongly agreed and less than one-fourth (23%) disagreed or strongly disagreed. The mean response of 3.77 (SD = 1.48) on a six-point Likert-type Scale indicated agreement, though not strong agreement; however, more respondents did agree that their organizations considered diversity a business issue than those who disagreed. It is clear that a number of organizations considered diversity as a business issue and that a smaller number did not. Whether or not there is movement in the direction of viewing diversity as a business issue can only be established by comparing results of future surveys with this one.

Were diversity efforts viewed as effective? Respondents were asked about the importance of the success of their diversity efforts to their organizations, and also about the extent to which their organizations implemented their diversity efforts. Respondents agreed that their organizations considered the success of their diversity efforts to be important (M = 4.53, SD = 1.20, on a scale of 1 = Strongly Disagree to 6 = Strongly Agree). However, they indicated that their organizations' diversity efforts were only somewhat implemented (M = 3.71, SD = 1.16, on a scale of 1= "Not Implemented" to 6= "Extensively Implemented"). There seems to be some indication here that organizations' motivation to be successful in their diversity efforts was stronger than their ability to implement them at this point.

How were diversity efforts monitored or evaluated? The performance measures organizations used most often (Mean of 4.0 or above on 6-point scale) were increased diversity at all management levels, increased diversity at the middle-management level, increased diversity at the top-management level, and increase in employee satisfaction (most likely measured through climate surveys). Increase in employee knowledge of diversity and decrease in employee turnover rate were also somewhat used.

Several evaluation themes emerged from the open-ended responses about how diversity efforts were monitored. The majority of responses were designated as Evaluation Methods, such as surveys, training evaluation, statistical analysis, measurable calendar of objectives, targeted MBOs, attendance at programs, and discussion and response. Of these, surveys and training evaluation were most used. Affirmative Action Goals were another frequently used method.

Several of these methods could be used to help measure different levels of diversity performance. For example, individual diversity performance could be measured through training results evaluation; organizational performance, through climate surveys aligned with organizational goals; or economic performance, through setting financially measurable diversity goals aligned with strategic business objectives. It was important to discover that some organizations were trying to evaluate their efforts in ways that could be used to measure performance and business results, even though it was not known from these data if they were actually doing so.

Conclusions

This research survey study began out of a perceived need for, and an interest in, gathering empirical data for a baseline description of diversity development efforts in U.S. business organizations. The results provide a baseline description now, at a critical point in time for many organizations, and one with which future studies can be compared.

The study establishes some guidelines for organizational diversity development efforts. First, it establishes a rationale for going beyond discriminatory, reactive, legalistic, or short-term approaches to dealing with workforce diversity. It focuses organizations on valuing and managing their diversity as a business issue. It affirms workforce diversity as an asset that will benefit an organization and its employees through organization and human resource development efforts as opposed to discrimination and assimilation.

Second, it recognizes that valuing and managing diversity began largely as a response to the *Workforce 2000* report and actual changing workforce demographics--and their consequences for the workplace. For many, the realization has been that regulatory efforts from outside the organization cannot benefit the organization or its employees to the extent that a managing and valuing diversity approach can. There were also indications that external customer diversity and marketplace competition factors have been motivators for some organizations to pay attention to valuing and managing their internal diversity. Some organizations have based their diversity efforts on a social or ethical vision of doing the right thing, and they have also recognized a need to tie such efforts to their organization's business agenda for the long-term stability and culture change needed to support ongoing diversity development work.

Third, the study establishes a broad definition of diversity that includes and goes beyond protected-class differences, because *all* employees bring their differences, including a variety of group-identity differences, to the workplace. A broad definition moves workplace diversity issues beyond an "us versus them" struggle to focus on utilizing and maximizing diversity to accomplish both individual and organizational goals. It provides a superordinate, or overarching, goal for a unifying focus.

Fourth, the study gathers together a list of common components that can be used as HR/HRD guidelines for comparison or development of organizational diversity programs/processes. An example is the list of types of differences on which organizations focus their diversity efforts. It includes both those that are protected-class, compliance based differences (e.g., gender, race, age, and physical disability) and those that indicate a broader definition of diversity (e.g., sexual orientation, literacy, job function, work style, and family status). Other examples of common components of diversity efforts from the study include types of diversity development interventions (e.g., cultural diversity awareness training, team building, management development training, and training for continuous quality improvement) and types of measures used by organizations to assess their diversity performance (e.g., increased diversity at all organizational levels, increase in employee satisfaction, decrease in employee turnover rate, and increase in profit/productivity).

The study also examines business factors related to diversity development programs/processes, such as the level and importance of management involvement and support, the investment of money and time in employee training, the amount of training received and at what organizational levels, how HRD diversity efforts are monitored and evaluated, and perceived level of effectiveness.

The movement to value and manage diversity in the U.S. workplace is at a critical stage. Some organizations have begun to develop systemic and systematic efforts for valuing and managing diversity. Some organizations have attempted to connect their diversity efforts to organizational needs and business objectives through upfront assessment and developing measures for feedback and evaluation of their efforts at various performance levels. A long-term perspective and integration with other culture change efforts, such as continuous quality improvement, are needed to ensure that diversity will not become another faddish effort.

Recommendations for Practice

Doing the following things may help organizations ensure that their valuing and managing diversity efforts will make a lasting difference--for both the people and the organization; and they can provide information for theory-building and research in the field: (a) assessing organizational readiness and needs before beginning; (b) thinking and planning long-term, system-wide, and systematically; (c) aligning diversity efforts with strategic business objectives; (d) integrating diversity efforts with other large-scale organizational change efforts; and (e) measuring performance results against program/process objectives and strategic organizational goals.

These would be important whether the diversity development efforts are top-down or bottom-up. It could mean the difference between a faddish program that is dropped or left unsupported in times of crisis or changes, such as mergers and downsizing, and an effective transformational change process for valuing and managing diversity that is connected to performance. As both researchers and practitioners have begun to realize, the ultimate goal of diversity development work is to release the potential of *all* employees to work together and accomplish the organization's goals, through understanding and managing differences.

Recommendations for Research

Although a limitation of this study was its sample size, in terms of amount of data for statistical analysis, a good deal of descriptive data were gathered and analyzed to paint a baseline picture of diversity efforts on which to build. The findings are generalizable to the population studied, that of Fortune 500 manufacturing and service companies. Other business organizations also may find that the results can provide helpful information and guidelines for diversity development work.

How to get a higher response rate from a business population is a problem that needs to be addressed in future studies. One way to do this would be to increase the random sample size greatly. Lists other than the Fortune 500 companies could be considered, as well.

This study could also be done in other countries and the results compared. Nijhof (1993) did a similar study in The Netherlands with a much lower return rate, which necessitated changing the design to a qualitative case study to examine implicit and explicit policy in regard to workplace diversity.

Further descriptive survey studies with a larger sample of companies with diversity efforts are needed to determine possible relationships among variables and to look for significant differences among variables, as well as to compare and verify results. For example, are there differences--on components of diversity training efforts, or effectiveness measures, or whether or not diversity is considered a business issue--for service and manufacturing organizations, or for the various business sectors within those two categories, or for small, medium, and large sized organizations?

Future surveys can be compared longitudinally for trends and changes in effective workplace diversity development efforts, especially in relation to diversity as a business issue. Results from top executives, line managers, and/or employees at all levels could be compared to those from top HR professionals.

Some of the research questions that guided this study could be pursued using more qualitative methods, such as case study or ethnographic research. For example, how are valuing differences and managing diversity enacted in an organization as a business issue? How are diversity efforts evaluated for performance at different levels? What is it like to be valued and managed for your differences in an organization? Are there clues to links with motivational factors? with productivity?

This study provides a theoretical framework from an HRD perspective to undergird the practice of diversity development.

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A Theory of Diversity

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This paper presents a theory of diversity. This theory provides a psychological rational for why diversity is related to performance in groups. Gruenfeld and Hollingshead's application of integrative complexity to the study of group conceptualization provides the psychological basis for this theory. Within this framework, diversity in group membership is viewed as a source for differentiation in the group perspective. Conceptual links between the perspectives of more than one individual member lead to the emergence of unique, collectively produced ideas, representations, solutions, and arguments. Implications for HRD research and practice are discussed.

Today's work setting is a complex social environment, comprised on culturally diverse individuals working together in groups. Since the Hudson Institute's report, *Workforce 2000: Work and Workers in the 21st Century* (Johnston & Packer, 1987) dozens of books, articles and chapters announced the inevitable demographic changes taking place in the American workplace. The workforce has changed, and continues to change significantly from a number of perspectives: race, age, gender, ethnicity, education, and disability.

The scope of the issue of workforce diversity is enormous, covering most all businesses and industries. The perceived challenges related to increased workforce diversity stimulated greater investment by organizations in diversity initiatives, with the number of diversity experts reportedly increasing fourfold since 1990, and about half of fortune 500 companies have appointed a vice president or senior management level staff person to coordinate diversity efforts (Murray, 1993; Howles, 1994). Despite the increased support for diversity initiatives, they reportedly encounter mixed results, with many efforts falling prey to criticism about their effectiveness in achieving intended goals (Jacobs, 1994; Thomas, 1994; Harte, 1994; Bray, 1994; Murray, 1993; Sowell, 1991; Karp & Sutton, 1993). If supervisors, managers, and HRD practitioners are to make informed decisions about diversity in organizations, then more needs to be known about the performance of diverse work groups.

The purpose of this paper is to present a theory of diversity. This paper is organized to provide a need for the theory, describe the psychological basis for the theory, describe the features of the theory, and present opportunities for research and practice in HRD. The theory is based on my experiences as a "manager" of diverse work groups, as a trainer and consultant, as well as on a review of related literature across many disciplines.

The Need for a Theory

Along with the increase in diversity in the workforce, there has been a corresponding growth in research conducted on the diverse workforce. Researchers representing a number of fields as varied as communications, anthropology, management, and psychology have all attempted to develop useful theory related to workforce diversity within their particular disciplines. Despite the increase in research in this area, little has been done empirically or conceptually, to explain the ways in which workforce diversity contributes positive benefits to organizations. Instead, most research has focused on the challenges related to differences in the workplace. Two streams of research have stemmed from this view. The first focuses on the boundaries between ethnic groups and on the effects of ethnic characterization and

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identification. Research on prejudice and discrimination fall under this category. In the second stream of research, the focus in on the inter-group differences in cultural features and with the resultant interpersonal barriers or conflicts. The study of intercultural communication is an example of this research (For reviews on these streams of research see Ferdman, 1992).

In a practical sense, there are three primary reasons why organizations faced with demographic changes currently undertake diversity initiatives (Henderson, 1994). The first is the affirmative action, or legally driven argument which emphasizes the need for organizations to achieve equality of opportunity in the work environment through the changing of organizational demographics. This approach is compliance oriented, and intended to right previous wrongs. The second is the valuing of diversity, or moral and ethical argument which emphasizes the appreciation of cultural diversity and the creation of an environment in which employees feel valued and accepted. Organizations approaching diversity from this perspective focus primarily on changes in attitude toward women and minorities. Lastly is the managing diversity perspective, which suggests that diversity is linked in important ways to organizational performance improvement (Henderson, 1994; Cox, 1993; and Washington, 1993). Organizations approaching diversity from this perspective work to enhance organizational morale, productivity and benefits. While these views take into account various aspects of diversity in the context of organizations, which provide the current rationale for a variety of HRD interventions around diversity issues in organizations, the picture of diversity in the workforce is incomplete. It remains to be determined whether there is *psychological* support for the notion that cultural diversity in group membership in and of itself contributes to group functioning.

Psychological Basis for the Theory

The idea of group cognition has long had a controversial status in the social sciences (Allport, 1962). A number of theorists have recently argued that people in groups are able to pool their knowledge and cognitive abilities into something that is greater than the sum of its parts (Gruenfeld and Hollinghead, 1993; Levine and Resnick, 1993). Resnick (1987) suggests that each persons ability to function successfully at work, depends on coordinated cognitive interactions with others, and that cognitive "products" that emerge cannot be attributed to single individuals. These theorists suggest that, through the course of group interaction, cognition is constructed, shared and distributed (for reviews see Levine and Resnick, 1993).

Gruenfeld and Hollinghead (1993) suggest that groups of individuals with diverse perspectives exchange and mutually "contaminate" one anothers thoughts, knowledge, opinions and values via social interaction, and that thorough these interactions, cognitions develop and change. Shared cognitive products are said to then be produced by social exchanges. This socio-cognitive orientation has produced conceptual properties among which is the notion of integrative complexity and its application to the study of group conceptualization. In order to understand the nature of integrative complexity as applied to group conceptualizations, I will first explain integrative complexity as it applies to individual concept development.

Integrative Complexity In order to fully understand the theoretical position taken here on group conceptualizations, one must first understand the significance of concepts to individual human thinking. Concepts are the stored, organized effects of past experience (Harvey, Hunt, & Schroder, 1961). In a most general sense, a concept is a schema for evaluating impinging stimulus objects or events (Harvey, et. al., 1961). The relevance of an external object is dependent on the way it is differentiated from other objects in the environment, and functionally compared to internal referents operative at the moment. Concepts, then, represent the joint product of the interdependent operation of situational and dispositional factors. The psychological process through which this interaction finds expression is that of differentiation-integration (Harvey, et. al., 1961).

Differentiation-integration can then be seen as a process by means of which an organism breaks their environing world down into parts and relates them in a way relevant to their motive system and existence (Harvey, et. al., 1961). The resultant or out-growth of this process is the level of concreteness-abstractness a concept attains. Thus, the highly integrated and abstract conceptualizations are considered more complex than the undifferentiated and concrete concepts.

Goldstein and Scheerer's (1941) research highlights the distinction between levels of concreteness-abstractness as it applies to the psychological functioning of individuals. According to Goldstein and Scheerer certain modes of behavior are related to an individuals ability to achieve greater levels of abstraction, which include: shifting reflectively from one aspect of a situation to another; considering simultaneously various aspects; grasping the essentials of a given whole, breaking up the whole into parts, and isolating and synthesizing them; planning ahead ideationally; and assuming an attitude toward the more possible and to think or perform symbolically (Goldstein & Scheerer, 1941 p. 4). It is clear that there is great benefit to an individual who has to ability to differentiate and integrate concepts at a more complex level, given the behavior implications mentioned here.

Integrative Complexity of Group Conceptualization Gruenfeld and Hollingshead (1993, p. 387) proposed that integrative complexity could be useful as a group level construct, by thinking of differentiation and integration as "characteristic of social interchange that may be reflected in shared conceptualizations that groups develop over time." Integrative complexity, then, reflects the "extent to which groups as a whole have adopted or elaborated on the differentiation that exists among members' perspectives and the way in which the diversity of those perspectives have been reconciled" (p.388).

Within the framework of integrative complexity, Gruenfeld and Hollingshead, suggest that each individual member serves as a potential source of group differentiation. Differentiation, as defined in the group context, is the recognition of multiple perspectives on an issue. If a group is faced with a problem, for example, and all members share the same uni-dimensional perspective, then the group perspective will not be highly differentiated. If however, a group is faced with a problem, and the various member perspectives represent more than one dimension of knowledge or opinion about an issue, there is potential for group differentiation. Taking it further, Gruenfeld and Hollingshead state, "to the extent that diverse views are discussed during interaction, group differentiation is expressed, and to the extent that the group adopts differentiated perspectives in their shared conceptualization, group differentiation is manifested" (p. 387).

The process of integration as a group phenomenon, as expressed by Gruenfeld and Hollinghead, is the recognition of conceptual connections, such as tensions and trade offs, among differentiated dimensions. Group integration can be characterized as "the active generation by interacting group members, of new conceptual links--such as integrative solutions, overarching rules, and novel representations--that preserve the validity of more than one of their individual points of view (p. 388)." A group with the ability to achieve higher levels of integrative complexity of group conceptualizations will have expanded performance potential, and may possess adjustment capabilities to the range of decision tasks of considerable importance to an organization.

The process of social interaction in work groups between individuals possessing different culturally-influenced perspectives, influencing group member cognition changes and improving group cognitive products over an appreciable period of time can be best characterized by the process of integrative complexity. No other psychological theory more accurately explains the process contributions of the social interaction of culturally diverse group members. The theoretical refinement offered by the process of integrative complexity leads to the advancement of a theory of diversity in organizations.

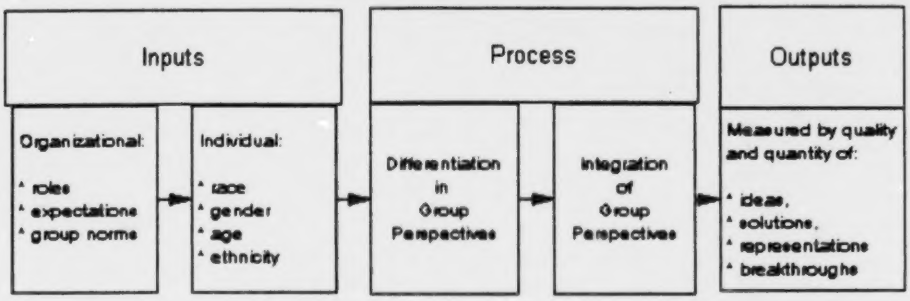
Description of the Theory

When a group faces a problem, object or event, the perspectives of culturally diverse individuals in the group serve as sources of group differentiation. If individuals possessing different culturally-influenced perspectives openly interact in work groups, then the group perspective will be highly differentiated. If individuals possessing similar culturally-influenced perspectives openly interact, then the group perspective will not be highly differentiated.

There are a number of assumptions that speak to the boundaries of the theory which need to be stated before deriving logical deductions about the theory in operation. First, the theory is limited to situations of employment in organizations. Second it is an assumption that employees have the opportunity to interact with other employees in the same work group and that there is active discussion participation among group members. It is a third assumption of this theory that individuals have the capability to participate on the issue in question. Lastly it is assumed that group activities are focused on specific cognitive outcomes.

The model illustrated here in Figure 1 represents inputs in the form of organizational culture, group norms, and diversity in work group membership; integrative complexity as characterized by differentiation--integration; and group outputs in the form of unique solutions, ideas, and other representations.

Figure 1. Theory of Diversity



Inputs Inputs are the information and people that will be used to produce the output. In this model there are two forms of inputs: organizational and individual.

Organizational. Alderfer's (1982) concept of embedded intergroup relations suggests that intergroup relations within a given setting cannot be considered in isolation. That is to say, one cannot explain or predict the nature of relations between group members unless we understand the nature of relations within the larger organization. Organizations can vary in the manner in which expectations regarding diversity in the workplace are formally and informally communicated. A related experimental study examined whether people would rate an organization more positively if it had a managing diversity policy (Williams, 1994). Participants in the managing diversity condition rated the organization significantly more positively than did those in the control condition. Consequently, any effort to cultivate diverse work group effectiveness should consider organizational issues, systems and practices which may either support or act against the success of these diverse work groups.

Norms are "rules" of behavior that govern a group: who can do what when (Katz & Kahn, 1978). It has been suggested by Hackman (1976) that most of the "regulating" of group member behavior typically takes place through behavioral norms which are created and enforced by group members. Since group norms are characteristic of the group as a whole, it is important to consider them and their relationship to group products. Groups often apply pressures on their members so as to bring about a uniformity of beliefs, attitudes, values, and behaviors. Homogenizing influences on group members can be exerted in both conscious and unconscious ways, in the way of group norms. Alternatively, group norms could encourage support for individuals expressing different viewpoints. Given the variance that the nature, number and complexity group norms can take, it remains a question as to what specific norms are best for diverse groups.

Cultural Diversity in Group Composition. One of psychology's most basic dogmas and pervasive assumptions is the operation of individual differences in all functioning. One of the ways that people can be described as different is by one of the many cultures to which they belong. Jones (1983) defines culture as a configuration of beliefs, values, symbols, and behaviors that are historically-based and that provide a framework for behavior in the future. Cultural diversity, then, can be thought of as the ways that we are different based on our historically-based configurations of beliefs, values, symbols, and behaviors.

Prior knowledge and cultural background are said to greatly influence an individual's interpretation of a given situation and their ability to comprehend it. Schema theory has often been used to explain interpretive and comprehension processes. Schemata are hypothetical mental structures that incorporate general knowledge into an organizational framework (Altarriba & Forsythe, 1993, p. 145). They are thought to be the basic fundamental elements upon which human information processing depends

(Rumelhart, 1980). Since a schema is an organized representation of one's experience, culture can influence the schema one has (Pritchard, 1990).

One study on children from different cultures with the same IQ sores, supported the idea that different cultural groups show systematic differences in patterns of cognition (Bracey, 1991). Work in the area of reading comprehension has also demonstrated the influence of culture specific schemata. Pritchard (1990) for example, found that people reading culturally familiar text incorporated their background knowledge and made more elaborations with the passages. Conversely, people reading culturally unfamiliar text accepted ambiguity more but had more difficulty tying the text to their background. Cultural schemata can also influence one's belief and attitude about information that has been read in a culturally unfamiliar text. Research conducted by Halasz (1991) comparing interpretive differences between American and Hungarians reading short stories concluded that each groups' historical-social experiences constituted their knowledge base or schema, with which they attempted to comprehend the culturally unfamiliar texts that were presented.

Differences in interpretation, as influenced by culture, have been found to impact the workplace in many ways. Holt & Keats (1992) investigated the influence of ethnic cultural background and multicultural interaction on the structure of individual work cognitions. They identified culture-specific achievement structures, and found that variations in work cognition structures among different ethnic groups were explained on the basis of the culture-specific achievement structure. Another study conducted in the workplace points out that men, women, and people of color identify, define and organize their experience in the organization in unique ways (Fine, Johnson, & Ryan, 1990). These researchers concluded that several factors account for these different experiences. The context of organizational life is different for each group. Compared to men, women hold lower level positions at lower salaries and so they see the organization from the bottom. Minority members are fewer in number than their majority counterparts, so they view the organization in isolation. Second, each group appears most comfortable communicating within their own group. Since access to communication networks determines the particular information we receive, different groups receive different information through which to interpret the world. The third suggestion offered is that the cultures of gender and race give unique perspectives on organizing experience.

Process Processes are used to change inputs into outputs. In this sense, the process of differentiation--integration as it relates to group conceptualization will be explained.

Differentiation. As mentioned earlier, differentiation is the recognition of multiple perspectives on an issue.The importance of culture on an individual perspective on any given matter is a potential source of differentiation in a group's perspective. Hanson and Brooks (1994) suggest that cultural frames that affect business are multidimensional, being influenced by societal values, organizational affiliations and occupational alliances. Neck and Manz (1994) suggest that by maintaining their separate belief systems, group members are able to critically examine the decision making process without being influenced to conform to a group view that overwhelms individual viewpoints. They go on to suggest that when members of a group become detached from their own separate identity and viewpoint, their decision-making effectiveness is at risk. Models of cognitive categorization based on individual differences have been proposed to explain the differences in perspectives between an expatriate manager and their subordinate employee, specifically related to the difference in how they collect, process and store information about one anothers behavior (Shaw, 1990). Given these important findings and suggestions, culture diversity should be seen as an important source of differentiation in the group perspective, where individuals are asked to make judgments and/or perform in relation to some situation which draws meaning from their culturally influenced cognitive processes and unique histories.

There are a number of challenges to the expression and manifestation of group differentiation in diverse work groups. First, a group can lose its ability to make use of the cognitive ability of its members and instead seek complacency and complete agreement. One such phenomenon has been described as groupthink. Janis (1983) suggests that people involved in cohesive groups have a tendency to strive for agreement, which may override their efforts to appraise alternative courses of action. Among the reasons cited as conditions which produce or facilitate groupthink were a lack of norms requiring methodological procedures and homogeneity of members' social background and ideology. Janis (1983, p. 175) posits that the consequences of groupthink in decision making groups are: 1) incomplete survey of alternatives, 2) incomplete survey of objectives, 3) failure to examine the risks of the preferred choice, 4) failure to appraise initially rejected alternatives, 5) poor information search, 6) selective bias in processing information at hand, 7) failure to work out contingency plans. This phenomenon has been empirically investigated under a variety of conditions by other researchers (see Moorhead & Montenari, 1986; Leana, 1985).

A second challenge to expressing differentiation in the group perspective is that of low participation by members of minority groups. Kirchmeyer and Cohen's (1992) and Kirchmeyer's (1993) research on multicultural groups demonstrate a marked difference in the contribution levels of visible minorities in multicultural work groups. Individuals in the cultural minority were also found to be less committed to the group itself. Low scores on communication competence and masculinity, and high scores on femininity were associated both with minority status and contribution level to decision making (Kirchmeyer, 1993). Kirchmeyer concluded that minority members were at a disadvantage in groups dominated by others who: (a) communicated more effectively and appropriately, (b) were more assertive, and (c) expressed less concern for others.

Integration. Group integration can be viewed as the process by which the perspectives of culturally diverse individuals are reconciled. The central question here becomes: Given the pressure toward coming up with a group conceptualization, to what extent does culture uniquely influence the process of integration in diverse work groups? Festinger (1950) theorized that the greater the source of pressure toward uniformity in groups where different attitudes, beliefs and opinions exist, the greater will be the forces to communicate (Festinger, 1950). When people with different perspectives on a problem are working together to come up with a group conceptualization, the communication process gets emphasized, and many behavioral differences may emerge, some of which support the integration process in diverse work groups. An example of this kind of phenomenon was illustrated by Cox (1991) who found that at an individual level, Asian, African American, and Hispanic individuals have a more collectivist-cooperative orientation to a task than do Anglo individuals.

Maintaining a variety of cultural identities may however create communication challenges as culture, affects the work-related values and behaviors of group members (Hofstede, 1984; Jakofsky, Slocum & McQuaid, 1988). Culture itself affects group members' level of participation and openness (Kirchmeyer and Cohen, 1992; Kirchmeyer,1993; Tang & Kirkbride, 1986). A heightened incidence of interpersonal problems and communication difficulties has been associated with groups diverse in membership (Ruhe & Eatman, 1977). Integration of diversity is being emphasized as a mechanism of effective communication for diverse workgroups (Maznevski, 1994). In order to both maintain their unique perspective and identity, and integrate a variety of perspectives through interaction, culturally diverse work groups may have to overcome some of the difficulties that cultural differences can present.

Outputs Outputs are what the group provides as it works to accomplish its goals and purpose. Outputs can be measured in terms of quality and quantity. In the study conducted by Gruenfeld and Hollingshead (1993), conceptual growth was an output which occurred for participants in the study over time. New cognitive products were also group outputs. Gruenfeld and Hollingshead (1993) specifically found that the integrative complexity expressed in groups evolved differently from the integrative complexity of individuals. During the first five weeks of their study, the integrative complexity of group essays was significantly lower than that of the highest complexity individuals, and not significantly greater than that of the average of individual essays. During the last part of the 12 week semester, the level of group integrative complexity increased at a greater rate than either the average or highest individual levels. until it was significantly greater than the average individual levels and not significantly different from the highest individual member (p. 401). Related to task performance, Gruenfeld and Hollingshead suggested that, over time, group members become increasingly able or motivated to generate or recognize diversity among their perspectives and to work at incorporating one another's perspectives when constructing shared conceptualizations.

Presently, little research exists related to culturally diverse work groups, that can be offered in support of this perspective. One study where individuals composed of different ethnic groups were compared to homogenous groups outperformed them relative to solution quality (Ling, 1990). There are, however, a few research articles that support the thesis that heterogeneous groups, if well managed can out perform homogenous groups with various factors being cited including gender, age and race (Shaw, 1981; McGrath, 1984). Research on innovative work groups have identified member diversity as a factor contributing favorably to the innovation process including stimulating new combinations of facts (Kono, 1988). In support of these outcomes, Kanter's (1983) study of innovation in organizations revealed that innovative companies often deliberately put together heterogeneous teams to nurture creativity and broaden range of ideas. There is clearly a need for more research in this area.

In general, there is evidence that groups do not always perform better than individuals on all kinds of tasks. Hastie (1986) concluded, after reviewing studies of individual vs. group accuracy in judgment tasks, that the relative performance of individual and groups depended on the nature of the task. "Solution demonstrability" has been offered as a critical determinant of a groups ability to develop an adequate shared representation, with groups performing better than individuals when the task has a correct solution that can be readily demonstrated and communicated to members (Laughlin & Ellis, 1986). There are also advantages and disadvantages associated with complex decision strategies (for examination of the guidelines, see Gruenfeld & Hollingshead, 1993).

The relationship between input, process and output are such that: If organizational inputs in the form of roles, norms and expectations are supportive of diversity, and if individuals in workgroups are diverse in terms of gender, race, ethnicity, and age, then the group perspective on a problem or issue will be highly differentiated, resulting in an increase in the quantity and quality of group outputs including ideas, solutions and other cognitive products.

Future HRD Research Issues

Given the increased diversity in the workplace, and the associated challenges and opportunities, research in this area should be of great importance to HRD scholars. Research needs to be conducted in both experimental situations and in work environments on intact groups to test the main principles. Longitudinal research needs to be conducted to measure the influence of differentiated perspectives on individual group member cognitions, and group cognitive ability over time. More specific HRD related questions can be asked related to training, motivation and commitment, and evaluation to name a few.

Training Research Questions Training is the process of transmitting new knowledge, skills and awareness to employees. Training can take different forms and occur at different times in a groups process. Questions in this area could include: What awareness messages foster differentiation in diverse work groups? What kind of training is best for effective group interaction among diverse members? What is the relationship between training and commitment to the group process?

Motivation and Commitment In this sense, motivation and commitment refers to the inclination of people to participate and continue their participation in diverse work groups, or managements inclination to create and maintain diverse work groups. The presence or absence of commitment to group outcomes may determine the extent to which employees participate in group discussions. The presence or abscense of favorable outcomes may determine management's commitment. Questions might also consider: What behaviors constitute a persons level of commitment to the outcomes of diverse work groups? What is the impact of management's commitment to creating diverse work groups or the employees attitude about participating on them?

Evaluation Evaluation can be used to determine if diverse work groups are effective at achieving their intended goals. Evaluation can occur at different times, could serve a variety of purposes, and could involve any number of people. An HRD focus could include questions such as: What are the best ways to evaluate diverse workgroups? What are the cognitive, affective and behavioral affects of having group members participate in the evaluation process?

Conducting research in this area is not without its methodological difficulties. One fundamental question is, how much diversity is enough diversity? Cultural diversity being studied as a variable in work groups is a difficult thing to measure. As Gauvain (1994) points out, there is "nothing psychologically meaningful" about being Euro-American or African American. What is psychologically meaningful is why growing up living one's life as a male, or living one's life as a female, or growing up in a Euro-American community versus an African American community leads to different psychological performance on some dependent measure. In this sense, it is difficult to consider culture in and of itself an effective independent variable. To complicate matters more, some people may identify themselves in one cultural group, but in reality they may belong to a couple of overlapping cultural groups, or belong to another significant group all together. While each person is a member of a particular ethnic group, he or she has their own individual image of the cultural features -- the beliefs, values, and norms -- that are appropriate to membership in their ethnic group (Ferdman, 1990). These images may differ from the images of others belonging to the same ethnic group. Another issue is that individuals will differ in the degree to which they actually exhibit the cultural features that characterize the group as a whole. Small numbers of people of color in some organizations may prove difficult for comparative statistical procedures, and conclusions drawn from them may violate the assumptions of the statistical tests.

Role of HRD Personnel

HRD should develop programs which educate management and employees about the benefits of work group diversity. Initiatives which encourage groups to search out a variety of perspectives in the group situation, to build on ideas, and to integrate different perspectives will foster the potential offered by diverse work groups. Interpersonal skills training may be necessary to build communication competence and to improve the overall performance of the work group (Kirchmeyer, 1993). Feedback systems should be designed to inform these groups of their performance, and the consequences of their performance on the organization. Team building activities should be constructed and provided for ongoing work groups that have a history of experiencing conflict based on their differences. Appropriate norms and goals should be identified and communicated to these groups in order to provide both guidance and reinforcement.

Conclusion

The world of work can be described by its increasing complexity. New technologies, global markets, and workforce diversity all add to these complexities. The need for organizations to tap into their sources of creativity for their survival and growth under increasingly complex conditions is being stressed by both business professors and corporate CEOs (Vyas, 1994). Burns (1994) suggests that rapid innovation born of employee creativity has become a differentiator for many leading businesses. One such source of creativity and problem solving is the use of culturally diverse work groups.

Presently, very little theory exists to guide practitioners in responding to diversity, and little research has been conducted to date examining the factors relating diversity to performance. The lack of research connecting many of the variables in this model represents an opportunity for scholars in our field. With the theory as a guide, researchers can develop agendas aimed at uncovering new knowledge as it relates to a diverse workforce. In the workplace, HRD practitioners must have high regard for the desired outcomes the system must produce, and must identify effective ways to link diversity to those outcomes. This research area will provide important information to both HR Managers and HRD professionals about ways to best target organizational improvement resources.

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Work Force Diversity in Fortune 500 Corporations Headquartered in Minnesota: Concepts and Practices

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This paper summarizes the findings from a research study on the status of the work force diversity process in Fortune 500 corporations. The research study was a benchmarking study, an inquiry into the policies, practices, and procedures our largest, most successful business organizations are using to address work force diversity. This study provides the reader with a conceptual framework for designing, implementing, and evaluating a work force diversity plan.

The purpose of the study was to provide information on the status of the diversity process in large corporations, to report on the dimensions of the diversity initiatives and programs, and to interpret the dynamics of the corporate response to work force diversity. The study addressed the following research questions:

1. How do human resource managers or work force diversity managers in Fortune 500 corporations headquartered in Minnesota define work force diversity? (What meanings do they ascribe to the term diversity?)
2. How is this definition interpreted and manifested in corporate policies, programs, and practices? (How did the awareness of diversity and organizational responses to it evolve over time?)
3. What are effective strategies for communicating, promoting, and integrating the concept of diversity into all aspects of the organization?
4. How are these efforts evaluated in organizations?

Research Procedures

The researcher used interpretive methodologies with a multimethod triangulation approach to data collection and analysis. This included three kinds of data collection procedures: (a) in-depth, open-ended interviews with human resource managers, directors of work force diversity, or designated persons within corporations with responsibilities for implementation and evaluation of diversity initiatives; (b) direct observation of diversity initiatives; and (c) collection of written documents related to the diversity process within corporations. Twenty-nine formal interviews were conducted with 32 individuals in 26 corporations. Participant responses contained in the verbatim interview transcriptions were content-analyzed guided by the four broad research questions. Field notes from observations and analyses of the related corporate documents provided additional documentation. A variety of assessment and analysis forms were designed to collect and analyze documents provided by corporations. Results were recorded in a series of matrices that rank ordered the corporations according to their ratings on the forms.

Findings

The findings from the study are divided into sections associated with the four broad research questions. The research questions were designed to provide information on definitions of diversity, the evolution of the process within corporations, the implementation of strategies, and the evaluation of those efforts.

Definitions of Diversity Four basic themes related to the definition of diversity emerged from the interview data:

1. Diversity includes a broad range of differences in the work force. These differences include age, disability, education levels, ethnicity, family structure, function, geographic location, race, religion, sexual orientation, style, and values. Definitions are extremely broad and all-inclusive.
2. The meaningful aspects of diversity are how it affects the individual and the organization.

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4. Some formal benchmarking is taking place.
5. The organization is at the beginning of a cultural assessment.
6. They are within the first two years of planning and implementation.
7. The spokesperson lacks knowledge of related diversity issues in other business functions.
8. There is some documentation of the diversity process.

Stage 3--Taking A Stand. Corporations in the third stage of the diversity process were committed to the concept of diversity, articulated the business case for it, and tied community affairs to internal goals. Spokespersons for the corporation were serious about the intent of their efforts. The following statements reflected their general opinions on the diversity efforts within their organizations:

- We believe in it.
- We're doing it.
- We won't be last.
- It's a competitive edge.

In Stage 3--Taking A Stand, corporations were well into the diversity process in their organizations; much of the groundwork had been laid. Four corporations in this stage, in addition to sharing several of the characteristics of corporations in Stage 2, exhibited the following characteristics:

1. Diversity leadership is in the hands of the senior vice president of human resources.
2. Education and training programs are in place.
3. There is a reported CEO commitment to diversity.
4. Formal benchmarking has been done.
5. There is documentation of the process through training modules, employee newsletters, and community relations reports.
6. There has been some senior management training.

Stage 4--Progressing Despite Challenges. Corporations in Stage 4 had established a history and were at a point of reassessment and renewed commitment. Economic and marketplace forces were creating challenges for these organizations. Corporations in this stage had a clear commitment based on several years of initiatives in multiple dimensions of organizational life. Internally structured barriers had been reduced, and awareness of diversity goals was evident organization-wide. The following statements were reflective of organizations in this stage:

- We're continually educating and training.
- We've broadened our support across the organization.
- We reach out to the community and support volunteerism.
- Our financial challenges drain energies and resources.

In the five corporations progressing despite challenges, the spokespersons shared the similar experience of leading diversity efforts in their organization over an extended period of time. Their knowledge of the process was based on years of professional and personal experience with advocacy. Their leadership role led them from preliminary, groundbreaking work to current goal setting and planning efforts designed to sustain the diversity process and build on past achievements regardless of economic vagaries and marketplace shifts that threaten the bottom line. The corporations in Stage 4--Progressing Despite Challenges showed evidence of these characteristics:

1. Diversity leadership is in the hands of the senior vice president of human resources or the director of employee relations.
2. There has been education and training related to diversity over an extended period (up to five years).
3. A written account of the CEO's commitment to diversity appears in corporate documents.
4. The corporation is committed to community outreach and weaves diversity into its community affairs activities.
5. The corporation is troubled by starts and stops related to financial pressures.
6. There is some documentation related to the process.

Stage 5--Exemplary Leadership. There were eight corporations that fell into Stage 5--Exemplary Leadership. Recall that even though these corporations were leaders in the diversity process based on self-reports and reports of their activities in a range of documentation, spokespersons for the corporations generally placed their organizations in the beginning stages of the diversity process. In comparison to other corporations in this sample of 36 corporations, clearly they were leaders based on their commitment and their extensive history of efforts internally and externally to encourage, promote, and sustain diversity within their organizations and in the broader community. By attitude and disposition, these organizational spokespersons reflected a strong and resolved image that is captured in the following statements:

- We want you to know.
- We want recognition.

- We've got the big picture.
- We plan, implement, measure, reward, and celebrate.

The eight corporations in Stage 5--Exemplary Leadership showed evidence of some or all of these characteristics:

1. Diversity leadership is in the hands of the vice president of diversity, the senior vice president of human resources, director of employee relations, director of affirmative action, or work force diversity manager.
2. There has been a long term effort at education and training.
3. Diversity is part of the strategic plan for the organization and there is strategic planning for the diversity process.
4. The corporation can provide a variety of documentation on the process.
5. There are coordinated efforts across functions and levels in the organization.
6. Community relations activities are tied to diversity efforts.
7. The corporation is relatively open to scrutiny.
8. There is evidence of strong CEO commitment to diversity.
9. There is a corporate decision to be an exemplar.
10. The corporation has award-winning efforts.
11. It takes a systemic approach to bringing about change.
12. Diversity leaders are articulate spokespersons.
13. Leadership is diffused throughout the organization.
14. Annual reports and community relations reports are reflective of the commitment to diversity.

Although corporations in each stage may not reflect all of the characteristics listed in the above model, they do exhibit most of them. While the diversity process model emerging from this study cannot be generalized to other corporations, it may be a useful guide for organizations who are benchmarking their policies, practices, and procedures against those of others.

Number of Corporations in Each of the Five Stages of the Diversity Process

	Stage	No. of Corporations	%*
1 --	Initial Openness	4	15
2 --	Cautious Movement Forward	5	20
3 --	Taking A Stand	4	15
4 --	Progressing Despite Challenges	5	20
5 --	Exemplary Leadership	8	30

Note. 26 corporations participating in the study
*Approximate

Implementation The third broad research question of this study addressed the range of strategies these corporations had implemented in their organizations by August and September of 1992. In the initial analysis, corporations were rank ordered based on the number of strategies participants cited in the interview process. The average number of strategies participants reported was 28. The range of strategies employed in the 26 corporations participating in the interview process was 6 to 80. Although the corporations cannot be listed by name in respect to confidentiality requirements, it can be noted that the top three corporations with strategies of 50 or more are in Stage 5 of the diversity process as described in an earlier section of this report. The top ten corporations in number of strategies cited are all in Stage 4 or Stage 5 of the diversity process. The bottom seven corporations, those listing less than 14 strategies each, are in Stage 1 or Stage 2 of the diversity process. The corporate spokesperson, who listed 80 strategies in the interview, represents a corporation which was also at the top of the list in the annual report and the community relations report rankings.

In the second step of the analysis of the data related to strategies, the researcher developed five categories of strategies that were inclusive of the range of strategies cited by interview participants. Categories of strategies emerged from the analysis of the individual corporate strategy lists and the strategic planning documents provided by the participants. Diversity strategies generally fell underneath the following five rubrics:

1. leadership and management,
2. education and training,
3. communication,
4. community relations, and
5. assessment and evaluation.

Leadership and Management. Strategies identified in the category of leadership and management were listed and rank-ordered according to the frequency of mention in the 29 interviews. In total, participants cited 95 strategies. The range of strategies cited was 0 to 53. The average number of leadership and management strategies cited was 14.4.

Education and Training. Of the 32 interview participants, only four participants reported that there were no diversity education and training efforts in their organization. Based on information provided in the interviews and documents, diversity education and training can be categorized in five approaches: (1) formal training, (2) informal educational practices, (3) specialized stand-alone training, (4) related training, and (5) support services. Formal training consisted of customized educational efforts directed at particular audiences in the organization including the CEO, executive management, senior management, management, supervisors, employees, new employees, and new managers. Training at the higher levels in the organization frequently involved external consultants. External diversity consultants were active in preparing train the trainer modules that were then used internally to develop in-house expertise. Participants cited 64 education and training strategies. The range of education and training strategies cited by participants was 0 to 14. The average number of education and training strategies cited was 4.8.

Communication. Communication is the rubric for the third category of strategies identified by participants. The largest number of strategies cited by participants are subsumed under leadership and management. Education and training strategies were also cited more frequently by participants. Communication strategies, on the other hand, are mentioned less frequently--on average two strategies cited per interview. Interview participants cited 24 communication strategies. The range of communication strategies cited was 0 to 13. The average number of communication strategies cited was 2.1.

In addition to analyzing interview data, the researcher analyzed two key corporate communication documents--the annual report and the community relations report. An annual report--document analysis form was used as an aid in compiling information on current organizational practices and key initiatives. The annual report--document analysis form is composed of 17 criteria useful in assessing diversity-related practices within organizations. The 17 criteria, in the form of a checklist with questions, address three broad concerns: (1) attention to general human resource issues; (2) photographs depicting diversity in the work force or in the customer base; and (3) description of community relations activities. The average score on the criteria was 7.7 in 1991.

Obviously, an important communication tool for organizations is underutilized. The annual report reaches the organization's stakeholders--customers, employees, shareholders, and the broader community. It could be a vehicle for articulating the organization's commitment to diversity, affirming the importance of human resources, reporting on progress, and evaluating results of work force diversity initiatives. It could be used to communicate a cohesive framework for linking all corporate functions in a comprehensive approach addressing work force diversity issues within the organization and externally through its marketing efforts and its community relations activities. Surprisingly, corporations with extensive histories in diversity initiatives did not all head the ratings list with high marks as expected. Some corporate leaders were not using the annual reports to communicate their commitment to the diversity process.

Documents describing corporate community relations activities were collected from 18 *Fortune 500* corporations. Out of the 33 *Fortune 500* corporations headquartered in Minnesota, only 18 publish a community relations report that is available to the general public. A researcher-designed analysis form used 21 criteria to assess the community relations reports. The criteria focused on two broad areas of concern: (a) corporate commitment to social responsibility and (b) documentation of that commitment through descriptions of programs, special events, volunteerism, and corporate giving. The average rating was 13 out of a possible 21.

Clearly, while organizations were contributing heavily to their communities, they were inadequately reporting the breadth and depth of their commitment. Like the annual report, the community relations report is a underutilized corporate communications tool. What is disappointing is the lack of content in these reports regarding the corporation's diversity commitment.

Community Relations. Participants cited 86 specific community relations strategies extending diversity practices beyond the confines of the corporation. The analysis of the interview transcriptions resulted in the identification of community relations strategies that ranged by corporation from 0 to 16. The average number of community relations strategies cited was 4.1.

Assessment and Evaluation. Participants identified 33 assessment and evaluation strategies. The range of assessment and evaluation strategies cited was 0 to 15. The average number of assessment and evaluation strategies implemented was 4.7. The fourth broad research question of this study addressed how organizations were evaluating their diversity efforts. An extended discussion of the evaluation process follows this section.

Summary. In total, interview participants cited 302 strategies currently employed in their organizations. While there may be some perceived overlap in categories and some strategies could be subsumed under a larger category, each strategy is distinctive. The list of strategies, based on the self-reports of participants with additional documentation on implementation provided in corporate publications, form an extensive body of activities corporations can pursue. The largest number of strategies cited are in the category of leadership and management. The second largest category by number of strategies cited is community relations. The third largest category by number of strategies is education and training. The fourth largest category is evaluation. The fifth largest category is communications.

Number of Strategies Cited by Category

Category	Number of Strategies	%
1. Leadership and Management	95	31
2. Education and Training	64	21
3. Communications	24	8
4. Community Relations	86	29
5. Evaluation	33	11
	302	100

Evaluations of Diversity Efforts For many corporations, the evaluation of the diversity process within their organizations remains a complex and knotty problem. The diversity process is a constantly evolving series of actions and changes within the organization in response to the interest, needs, and demands of a diverse work force. In each corporation, that continuously evolving goal is established and revised based on the influence of numerous organizational characteristics including climate, culture, history, leadership, work force demography, and financial stability. The conceptualization of the end goal for organizations pursuing a diversity agenda is time-bound and context-bound--changing with the economic, political, and social climate of the times.

Evaluation Methods and Measures. While many corporate representatives struggled with the evaluation process for the diversity efforts within their organizations but were able to describe some measures, five participants did not describe any evaluation methods or criteria. These participants represented corporations who: (a) were in the initial stage of the diversity process, (b) did not focus on measures, or (c) found it difficult to adequately measure the process within their organization. The two diversity evaluation measures most frequently mentioned were data from employee surveys and traditional affirmative action numbers. The four other evaluation methods, measures, or indices of diversity progress within these corporations were focus groups, turnover rates, hiring numbers, and listening to employees. Thirty-three different methods or measures were reported in use in the participating corporations.

Summary. Based on information collected in the interview, observation, and document analysis process, corporate representatives who lead the diversity process within their organizations lacked a clear, focused diversity evaluation plan that would provide valid, reliable results on current efforts. A few organizations were in the process of benchmarking their efforts, analyzing trends, and identifying key measures for their diversity process. A number of organizations tie management bonuses to evaluation data. Overall, there were few corporate representatives who articulated a comprehensive evaluation plan for their organization. Even corporate leaders with leading-edge human resource policies and practices find it difficult to define and delineate appropriate evaluation methods and measures.

There is no one effective instrument to measure diversity efforts within organizations. Corporate representatives reported the necessity of collecting and analyzing data using both quantitative and qualitative measures. On the foundation of traditional reporting of work force representation by race and gender are data related to the recruitment, hiring, development, and retention of employees. Those numbers provide hard, objective data. These are supplemented with data collected from employees using qualitative methods including surveys, focus groups, and one-on-one interviews evaluating employee satisfaction and organizational climate. Additional data are collected from reviews of policies, practices, and procedures that impact human resources. Findings resulting from the analysis of both streams of data can provide a broad picture and profile of the diversity process within an organization.

Literature Review

The knowledge base for diversity-related research is limited (Adler, 1991; Bolman & Deal, 1991; Cox, 1990; Jackson & Holvino, 1986) while diversity issues in organizations continue to gain prominence as central concerns for human resource professionals and managers (Brown & Davison, 1991; Catalyst, 1990; Jamieson & O'Mara, 1991; Smith, 1989; Towers Perrin & Hudson Institute, 1990). Research on diversity has been fragmented into studies on age, disability, gender, race/ethnicity, and sexual orientation. There is a growing effort by some researchers to synthesize the findings from these studies thereby providing a theoretical base to guide organization transformation efforts (Cox, 1993). However, few researchers have been able to theorize across race, gender, and class lines or address, at the same time, issues related to age, disability, and sexuality.

To significantly advance the scholarship on diversity, researchers will need to meld theory from several fields. This requires knowledge of organization transformation, leadership, systems, and feminist theory. In addition, the scholarship on diversity in various disciplines (individual and organizational psychology, intercultural communications, management, and sociology) must be woven together to attain the inclusiveness inherent in the term diversity.

Organization Transformation Across disciplines, scholars have recommended that organizational restructuring, reframing, or transformation move beyond what Albrecht and Brewer (1990) called "singular, monist models of social change" (p. 19). Transformative efforts must increasingly examine the dynamic intersection of race, gender, and class (Alperin, 1990). In addition, management theorists have suggested that single-frame thinking in organizational research has limited the development of theory leading to effective change models (Bolman and Deal, 1991). Organization transformation theorists have suggested that large-scale change (for example, responding effectively to the challenges of work force diversity) requires a holistic, ecological, humanistic approach (Fletcher, 1990). Transformative change requires a paradigm shift, frame-breaking, reshaping the entire nature, climate, and culture of the organization. It addresses deep-seated beliefs, values, and assumptions underlying the culture of the organization.

The organization transformation theorist facilitates the change by creating a humanistically oriented vision for the organization. Buckley and Perkins (1985) outlined a seven-stage process that explains the transformative change process in organizations. The seven stages are unconsciousness, awakening, reordering, translation, commitment, embodiment, and integration. Assuming that work force diversity coupled with other work place trends creates a substantial challenge to organizations, and that previous efforts to address diversity issues effectively have failed, it may be time to heed the organization transformation theorists recommendations. The inability to uproot and transform fundamental beliefs and values undergirding an organization's culture suggests that a fundamental shift in the way an organization works is required. Combining the recommendations of these authors representing different fields, linked only by a vision for organizational change, one can formulate an initial set of guidelines for facilitating change:

1. Use a holistic approach to problem-solving,
2. Reframe issues, solutions, and organizations by using multiple frameworks,
3. Find solutions by matching the questions with appropriate modes of inquiry, and
4. View the process as a journey.

Diversity Work force diversity is a broad-based subject covering a wide range of topics. A modest review of the literature would include a summary of readings focused on work force demographics, recent research studies, and organizational change models with their attendant recommended strategies. The review would include a sampling of information on work force diversity published in reports, research studies, professional journals, magazines, and newspaper articles. The limitations of this article disallow an in-depth analysis of recent publications.

However, it is advised that the reader pursue the literature by focusing initially on demographic projections, current work force statistics, and related data from reports that focus on issues of age, disability, gender, race, religion, and sexual orientation (see Johnston & Packer, 1987; Martin & Ross-Gordon, 1990; Nelton, 1992; Solomon, 1992). This lays the foundation for understanding the complexity of issues involved in any study of work force diversity. In particular, Kelly's (1991) work ties demographic projections and work force statistics together, interprets their impact on the work place, and suggests reasonable strategies based on these interpretations.

Besides profiling the work force through the collection of demographic data and identifying trends in the economy, researchers design studies that examine the status of human resource practices, describe employment discrimination, and explain work place inequities. Researchers conduct diversity surveys, case studies, and increasingly use benchmarking as a research tool (Catalyst, 1990, 1991a, 1991b; Cockburn, 1991; Galagan, 1993; "Managing Diversity," 1992; Nhan, 1993; Towers Perrin & Hudson Institute, 1990; Van Eron, 1992).

Research studies conducted on work force diversity range from a general approach to the topic of work force diversity, surveys of organizational initiatives to address diversity, and case studies of organizations with exemplary practices in relation to women or people of color. The studies focus on a variety of issues including employment discrimination against people of color, public attitudes towards people with disabilities, and foundation grant-making tracked by number of dollars to diverse groups (Chin, 1992; Cosgrove, 1993; Eberhart & Pratt, 1993; Epstein, 1991; "Making The," 1991; Meyers, 1993; Moylan, 1993). Morrison's (1992) study offers a cross-case analysis of organizations with exemplary diversity practices and has some similarities with this researcher's study in that both researchers identify current practices and distill those into a recommended set of strategies.

Adler (1983), Cox (1990), and Jackson and Holvino (1986) described organizations in terms of their response to the influence and impact of work force diversity. They provided definitions of diversity, and each proposed a stage theory related to the developmental phases an organization passes through as it moves towards inclusion and multiculturalism. There are a number of authors who have provided comprehensive plans for creating and sustaining diversity in organizations. The authors who have offered detailed plans with numerous broad-based strategies are Gardenswartz and Rowe (1993), Hayles (1989, 1993), Jamieson and O'Mara (1991), Loden and Rosener (1991), Morrison (1992), and Thomas (1990, 1991). They provide data on the prevalence of work force diversity programs and initiatives, inequities in our work place systems, and the resultant impact on organizations, groups and the individual. The authors, after identifying trends and the current status of responses to work force diversity, generate an action plan with a set of strategies that focus on reducing barriers, circumventing backlash, and providing opportunities for everyone.

To advance human resource practices in U.S. organizations, one needs to understand the current status of the work force and initiatives addressing its diversity. A basic awareness of previous research is required to frame up further studies to expand the knowledge base for diversity. A research-based, developmental model for designing a work force diversity plan is necessary for ensuring effectiveness. A proficient leader needs to have an extensive array of organizational strategies available to strengthen and support individual efforts. A review of the literature along with the findings of the research study offer the reader a research-based, conceptual framework for designing, implementing, and evaluating a work force diversity plan.

Key Findings and Recommendations

1. *Fortune 500* corporations have the resources--both human and financial--to offer leadership in the diversity process. Establish a vision that includes becoming an exemplar for other organizations.
2. Work force diversity is not a human resources program. It is a long-term educational process for the organization and the individuals within the organization. Set long-term and short-term goals.
3. Managers of work force diversity implement, monitor, and evaluate the strategic plan for diversity within their organization. Without leadership and effective management, efforts remain fragmented and

lack cohesion. Assign coordination to a competent leader who can build relationships across functions and levels in the organization.

4. Education and training around diversity issues is effective when it is articulated with all education and training systems within the organization and delivered to all employees including the CEO and entry level workers. Design, develop, and revise training according to your needs.
5. A communications plan maximizes efforts to bring the diversity message to all stakeholders. Include an editorial review process that scrutinizes all corporate documents, especially the annual reports and the community relations reports.
6. Community relations activities tied to organizational diversity goals strengthen the process internally and ensure credibility for corporate efforts in the broader community. Expect employee involvement in a broad range of community outreach activities. Lend expertise.
7. Evaluation of diversity initiatives remains a thorny problem. A clearly focused evaluation plan is a necessity. It includes accountability--rewards for progress. This assists in the creation of an environment wherein diversity can flourish.
8. There is no one diversity plan that is appropriate for all organizations. Strategies need to be implemented based on the unique characteristics of the organization. Reassess the organization frequently. Diversity, by its nature, requires self-reflection, organizationally and individually.

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3. The broadened definition of diversity requires a culture change within organizations. Diversity necessitates changes in management styles, human resource systems, philosophies, and approaches.
4. There is an emphasis on communicating a concept of diversity as more than race and gender and affirmative action and equal employment opportunity.

Work force diversity is defined broadly within *Fortune 500* corporations as evidenced by responses from human resources managers and directors of work force diversity. While many definitions include a list of demographic characteristics that attempts full inclusion of every difference within the work force, definitions commonly extend to implications for individuals and the organization as a whole. There is a general acknowledgment that diversity is an evolving concept with no one knowing with certainty the complete implications of it for the individual and the organization.

Every interview participant defined diversity in a unique and original manner although there were several commonalties. There is no one definitive definition that fully describes the broad range of differences it includes, the evolutionary nature of the process it represents, and the far-reaching impact it has on individuals and corporations.

Evolution of the Diversity Process The evolution of the diversity process is reported in relation to the analyses of data collected from the interviews, observations, and documents and data collected from a diversity continuum form completed by participants. A diversity stage process emerged from the analysis of the data from the three data streams. The diversity continuum findings demonstrate participants' perceptions of the progress their organizations have made in integrating diversity concepts and practices.

Progress on the Diversity Continuum. Thirty-two interview participants representing 26 corporations were asked to complete a diversity continuum data collection form. The researcher asked the participants to place a mark on the continuum that would exemplify their perception of where their organization was at the time of the interview in relation to where they want their organization to be. The participant's mark on the continuum line was given a numeric score on a scale of 0 to 10. The average placement point on the continuum was 2.89 based on 31 responses.

Stages in the Diversity Process. Corporations fell into five groupings reflective of five stages in the diversity process. The first group of corporations were in an initial stage of the diversity process, *Stage 1--Initial Openness*. Corporations in this category are hesitant and resistant to moving ahead. Based on information provided in the interview process, the general position of these four corporations were characterized in the following five short statements that reflect the attitudes of these organizations:

- We want to explore the issue first.
- Wait awhile, this will blow over.
- It won't work here.
- We don't need it.
- We don't want to be the last one either.

In Stage 1--Initial Openness, corporations shared most of the following characteristics:

1. Diversity leadership is in the hands of the senior vice president of human resources.
2. There is no obvious commitment to diversity at the CEO level.
3. There is no education and training in place.
4. There is a degree of openness to the idea of initiating efforts to address diversity beyond basic affirmative action/equal employment opportunity activities.
5. The organization is gathering information on diversity practices.
6. The organization is engaged in informal benchmarking activities related to diversity.

Stage 2--Cautious Movement Forward. In the second stage of the diversity process, corporations were beginning to question previous efforts, assign responsibility for preliminary data gathering, and form task forces to develop goals and plan activities. Five corporations in this stage were characterized in the following statements:

- We need to do something.
- Where do we start?
- How do we gain support across the organization?
- Who will shepherd this?

In Stage 2--Cautious Movement Forward, corporations showed evidence of some or all of the following characteristics:

1. Diversity leadership is in the hands of the senior vice president of human resources or it is assigned to a senior human resources representative.
2. A diversity task force has been formed.
3. There is evidence of initial CEO commitment.

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Race and Ethnicity-Related Cultural Diversity Training Programs: A Typology

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Organizations that experience ethnicity-related problems often identify cultural diversity training as a solution. However, there are multiple approaches and perspectives to such programs and programmatic outcomes will vary considerably with the approach selected. A typology is presented which identifies five types of programs: assimilation-acculturation, cultural awareness, multi-cultural, ethnocentrist, anti-racism.

Almost daily, via the news media, we hear stories of racial strife that result from interracial conflict, miscommunication, and ignorance. Organizations that experience ethnicity-related problems, such as interpersonal conflict, allegations of racism, law suits alleging racial discrimination, high employee turnover among minorities, low rates of professional advancement among minorities, and others, often identify either education or training as a solution. As a result, ethnicity-related cultural diversity education and training programs are becoming an important aspect of organizational life for many employees in U.S. agencies and organizations. In 1994, 56 percent of all organizations sent some employees to a diversity training program, a 40 percent increase since 1992 (Filipczak, 1994). However, the popularity of the programs, i.e., in terms of frequency of offerings, belie the fact that they are poorly understood, and they are among the most controversial training programs offered in the workplace (Filipczak, 1994).

Intended to make the workplace a more accommodating and accepting environment for women, people of color, workers with disabilities, and members of other groups identified historically as being victims of discrimination; these programs have become arenas of contestation. Instead of achieving the goals for which they were established, some of these programs have only served to antagonize, distance, and polarize diverse groups of employees, e.g., the backlash against programs that target white males (Mobley and Payne, 1992). These and other observations suggest that race and ethnicity-related cultural diversity training programs, as part of a broader social movement to improve race relations in the U.S., are at a crossroads. There are multiple approaches and perspectives to such programs and the outcomes experienced by an organization will vary considerably with the approach selected. This paper presents a conceptualization of race and ethnicity-related training programs which captures the variety of approaches currently being implemented in a variety of organizational settings.

Race as a Social Construct in the U.S.

In U.S. society, racial demarcation is endemic to the country's socio-cultural fabric and heritage. That is, its laws and economy, institutionalized structures and discourses, and its epistemologies and everyday customs are effected by the coloration of one's skin and (or) one's ethnic identity (Higginbotham, 1992). Racial and ethnic classifications have become so ingrained in our national psyche that they have become reified in our everyday lives as 'natural' and 'appropriate' ways to distinguish people. Such an ahistorical concept of "race" actually contributes to a lingering subtle but powerful racial ideology that exists as an unacknowledged barrier to equal opportunity in America (Berg, 1993). It does little to explain or critique unequal social relations underlying notions of "race," but it goes a long way to reinforcing the spurious notion that "races" exist as immutable natural entities and that there are thus natural origins to social differences. The ideology of "racial" difference allows more powerful social groups to maintain their hegemonic position through prejudice and discrimination (Higginbotham, 1992; Castex, 1994; Solomos and Back, 1994).

"Race" is still used by the federal government, academic institutions, businesses and other social agencies as a means to classify various groupings of people in the United States. This continued usage belie the fact that chromosome research reveals the fallacy of race as an accurate measure of genotypic

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or phenotypic difference between human beings, and both cross-cultural and historical studies of miscegenation law reveal shifting, arbitrary, and contradictory definitions of race (Higginbotham, 1992). The current federal categories for both race and ethnicity, which are employed by the U.S. Census Bureau, were developed during the 1970s (Lott, 1994). They recognize four minimum "race" categories: white, Black, American Indian or Alaskan Native, and Asian or Pacific Islander. Only two minimum "ethnic" categories were identified: "Hispanic origin" and "not of Hispanic origin."

Based on these classifications, demographers have determined that modern society is apparently undergoing a historic transition from a predominately white society rooted in Western culture to a global society composed of diverse racial and ethnic minorities (O'Hare, 1993). According to the latest Census Bureau projections, by the 21st century today's racial and ethnic minorities who now comprise about twenty-five percent of the U.S. population will comprise nearly one-half of all Americans. In the next century, African Americans, Asians, and Latinos will outnumber whites in the U.S. More importantly, the rapid growth in the number of minorities has been marked by an increasing diversity in terms of language differences, and cultural beliefs and practices within these population groups as new immigrant groups from the 1980s (such as Vietnamese, Cambodians, Dominicans, and Nicaraguans) have joined earlier immigrant groups of Mexican Americans, Cuban Americans, Chinese Americans, and Japanese (O'Hare, 1993). Also, by 2010, Hispanics are expected to supplant African Americans as the nation's largest minority group.

The Rationale for Diversity Programs

Ethnicity-related cultural diversity programs are often initiated in response to several imperatives that define interrelated trends and issues that are prominent in post-modernist U.S. society. A *demographic imperative* confronts most organizations and agencies. The demographic trends presented above will have almost immediate effects on the makeup of the U.S. labor force. By 2005 the labor force is projected to expand twenty-six percent to 151 million workers (Fullerton Jr. 1993). This labor force will be comprised of about five percent fewer white males and an equal percentage of more minorities: white males (38%), white females (35%), African-Americans (12%), Hispanics (11%), and Other (4%). Also, the U.S. labor pool of appropriately skilled workers is expanding at a slower pace than the demand for their labor, thereby creating more intense competition for talent.

These trends not only indicate a growing importance of racial and ethnic minorities to the nation's well-being, but they signify profound implications for the workplaces of most organizations. The management of organizations can respond to this reality by either ignoring it and as a consequence use only a portion of their human resources, or they can face the inevitable challenge and learn to manage a diverse work force. Many organizations have reacted by attempting to redefine old definitions of "fit" and are increasingly employing people from different ethnic and cultural origins (Fine, et al. 1990). However, once they have hired these individuals they are discovering that they must compete with other similar organizations to retain them and keep them motivated.

An *economic imperative* results from the fact that the significant increase in the populations of people of color also effects "market place" demands. Although whites continue to outstrip minorities on most indicators of wealth, possessing $44,400 in median net worth for all households in 1988 compared to $3,800 for African Americans, and $5,500 for Hispanics. For married-couple households, the median net worth increased to $61,400 for Whites, but only rose to $14,900 for African Americans, and $12,300 for Hispanics (O' Hare, 1993). However, a growing segment of minorities are achieving affluence within mainstream society. The number of minorities in the highest income categories nearly doubled during the 1980s (O' Hare, 1993). Also, according to the Population Reference Bureau, African Americans, Asians, and Latinos currently make up about 21 percent of the U.S. consumer base and they are expected to reach 25 percent by the year 2000. Minority markets now buy more than Canada or any of the other countries with which the U.S. trades. In 1990 they spent about $424 billion and they are expected to reach $650 billion by the year 2000. A culturally sensitive, diverse work force enables organizations to better understand and serve these diverse customers: consumers, clients, students, patients, victims, constituents, parishioners, or others.

A *social imperative* is also a reality for society at large and a great many organizations. People of color are often cited among the poorest, least educated, more criminally inclined, and most victimized populations in the U.S. (Wilson, 1987; and Hacker, 1992). However, today's people of color are also much more likely than previous generations to celebrate their own individuality and uniqueness and to demand respect and equal treatment when they encounter mainstream institutions. In progressive organizations, valuing diversity and managing differences is not just EEO-driven, but supported strongly by management.

A *leadership imperative* is an element in the new formula for management training. It suggests that individuals who have learned to function in diverse situations tend to develop superior cross-cultural communication skills, become better leaders, and develop better skills at giving and receiving feedback. Also, good management depends on effectively working with other people by understanding and appreciating differences in values and perspectives as well as simple differences of opinion (Morrison, 1992).

A *legal imperative* results from the fact that antidiscrimination laws have provided people of color access to educational institutions and occupations that were once closed to them because of blatant discrimination. While affirmative action legislation provided access to opportunities, it did little to address the underlying assumptions and stereotypes that plagued nontraditional employees and created barriers to advancement that persist today, e.g., people of color are viewed as inferior in intellect, training, and motivation (Morrison, 1992). As a consequence people of color have sought redress through the courts. However, discrimination lawsuits are monetarily expensive to the offending agencies and organizations, negatively impact market initiatives, and project to the community-at-large an unfriendly and/or hostile working and learning environment.

Although cultural diversity training programs are often initiated in response to one or more of these imperatives, the programs do not often accomplish the goals for which they were developed. Organizational initiatives seeking to remedy ethnicity-related organizational problems often fail to differentiate from among the many types of diversity educational and training options available to them.

Types of Programs

Ethnicity-related diversity training programs were first employed by K-12 school systems to help the educational establishment to cope with the influx of students whose cultural orientations and languages differed substantially from the norms set by white mainstream culture. The programs that were developed differed markedly in terms of philosophical orientation and approaches to dealing with such students. Sleeter and Grant (1994) provided an elaborate five-approach typology which captured these different approaches. It included: the human capital theory of education and society, human relations, single-group studies, multi-cultural education, and education that is multi-cultural and social reconstructionist.

Within the arena of corporate training programs, Morrison (1992) observed that several typologies describing the variety of approaches that organizational leaders have employed to deal with diversity-related issues were developed by Palmer in 1989 and Kim in 1991. Morrison's (1992) model incorporated the two previous models and briefly described five approaches to cultural diversity and their underlying assumptions: golden rule, assimilation, righting the wrongs, culture-specific, and multicultural.

The models presented above, and a review of the adult education literature on cultural diversity education and training programs suggest that five types of cultural diversity training programs are currently being implemented in corporate training and other organizational settings: assimilation-acculturation, cultural awareness, multi-cultural, ethno-centrist, and anti-racism. These types of programs will be described in regard to six variables: underlying assumptions, educational goal, clients, program content, mode of delivery, and criteria for success.

Assimilation-Acculturation The conventional approach to diversity in the U.S. has been Assimilation-Acculturation. Newcomers are expected to adapt so that they can "fit" into the existing organizational structure and culture. In this regard educational and training efforts are designed to help people of color and language minorities to improve academic participation and performance via deficiency reduction. Managers and human resource professionals believe that their company's culture evolved over the years in response to business realities, and that it is only reasonable to expect employees to conform (Thomas, Jr. 1991). They thereby reason that assimilation ensures unity and common purpose; without it chaos would reign. Therefore they seek to help minority workers to reduce deficiencies that may result from impoverished conditions or deficient cultures in order to improve their cognitive skills, information analysis and processing skills, language skills, and values to the levels required to function adequately in the existing organizational culture.

Sleeter and Grant (1994) argue that this approach is based on the "human capital theory of society" which holds that education is a form of investment. The individual acquires skills and knowledge that can be converted into income when used to acquire employment. This theory suggests that the poor are poor mainly because they have not developed their human capital. Poverty and inequality result from insufficient opportunities for people of color to acquire the knowledge and skills society needs.

The content of these programs is often derived from discipline-based knowledge and is therefore often irrelevant to the students' background experiences. However, the content attempts to remediate the learners' gaps in basic skills and knowledge. These programs are most often delivered via: adult basic education and adult secondary education classes that target low-literate learners, English as a Second Language classes for second language learners, and other remedial programmatic efforts. For example, in 1991 over 20 percent of all organizations with 100 or more employees offered "basic skills" courses in reading, writing, math, or English as a second language (Filipczak (1994). These programs are considered successful if they result in improved retention, increased academic (and academically-related) performance, and promotion of people of color within the existing structure and culture of the sponsoring organizations.

In the past, employees have been willing to pay the price of admission, that is, the loss of their ethnic identities when they enter the door of the corporation. However, increasingly minorities are expressing resistance to the notion of assimilation. Thomas, Jr., (1991) explained the dilemma faced by many minority employees who are never quite comfortable with their assimilated status. He argued that they must live in two worlds, and they are uncomfortable in both. Because they want to fit in they focus on identifying and cooperating with both spoken and unspoken cultural norms. They seek to play it safe by avoiding situations and suggestions that reflect their "differences". Consequently their personal strengths and(or) innovative ideas are stifled and their work performance suffers. For many minorities, in a competitive work environment, the strategy of assimilation that is devoid of other culturally relevant approaches and content is stifling and deadly.

Cultural Awareness Cultural awareness programs are among the most popular efforts that are usually linked to diversity training. They are designed to promote feelings of unity, tolerance, and acceptance within the existing organizational culture and structure. Sleeter and Grant (1994) identified these efforts with the "human relations approach", Morrison (1992) identified them as consistent with the "golden rule approach" to diversity, whereas Thomas Jr. (1991) identified it as "Valuing Differences". These texts agree that this approach seeks to: 1) help individuals communicate with, accept, and get along with people who are different from themselves by fostering awareness and acceptance of individual differences, 2) reduce stereotypes that individuals have about people by helping participants understand their own feelings and attitudes about people who are "different", 3) help individuals to feel good about themselves and about the groups of which they are members, without putting others down in the process, 4) explore how differences might be tapped as assets in the workplace, and 5) enhance work relations between people who are different. Some proponents of this approach relate it directly to the study of prejudice and intergroup hostility (Sleeter and Grant, 1994). They argue that because so many complex factors, e.g., home background, social situations, health, income, intelligence, and aspirations, affect human interaction and human relationships, this approach must take into account each individual's total personality.

Advocates of this approach believe that the attitudes and feelings people have about themselves and others should be targeted in order to replace tension and hostility with acceptance and care. They argue that the values promulgated via this approach should be fostered in everyone in order to transform the culture of the workplace. Therefore the clients for these efforts are usually everyone in the organization, with special efforts directed at straight white American males (SWAMs). The programs assume that dysfunctional behavior and attitudes derive from a lack of awareness and understanding and therefore they attempt to provide content that includes: a) examining the social groups of which one is a member and the views society has of these groups, b) examining friendship groups, the meaning of group membership, and group skills, and c) developing attitudes of acceptance and friendship between groups (Sleeter and Grant, 1994). They are usually delivered via staff development training for employees, video-taped programs, field trips, and other culturally unique experiences. The programs are considered successful if people of color experience increased feelings of inclusion and acceptance, and if the sponsoring organization experiences fewer complaints of racism and/or racism related law suits. However, Thomas Jr. (1991) argues that acceptance, tolerance, and understanding of diversity are not by themselves enough to create an empowered work force. He thereby argues that only the multi-cultural approach to diversity is sufficient to empower a multiracial work force to reach its full potential.

Multi-Cultural Multi-cultural programs (described as "managing diversity" by Thomas, Jr., (1991)) seek to promote socio-structural equality and cultural pluralism within organizations by more effectively managing diversity. This approach seeks to identify those elements of the organization's culture that are the fundamental roots to corporate behaviors, determine whether the root values support or hinder the aspirations for managing diversity, and change the cultural roots that are hindrances (Thomas Jr., 1991). Therefore the explicit goal within sponsoring organizations is to strengthen the organization by leveraging a host of significant differences (Morrison, 1992). It grows out of a concern that sponsoring organizations as they currently exist are unfair and detrimental to many people. Equal opportunity is not afforded to every citizen. For example, all ethnic and language groups are expected to display the behavioral and linguistic style of White, middle-class Americans before they are taken seriously (Sleeter and Grant, 1994). Theories of cultural transmission, social learning, and modeling provide insight into the processes people use to acquire values and beliefs.

This approach assumes that the socio-cultural environment of the organization must change and that the new norms must accommodate all employees (Morrison, 1992; and Thomas, Jr. 1991). The clients of these programs tend to be the same as those for *cultural awareness* programs with an increased emphasis on managers. Within work place organizations, multi-cultural programs are designed to infuse an approach to diversity at three levels of the organization simultaneously: individual, interpersonal and organizational. It approaches diversity from a management perspective by addressing issues relevant to how the organization is managed in order to create an environment in which all employees can reach their full potential. It views adaptation as a mutual process between the individual and the sponsoring organization, and requires a fundamental change in the organization's way of life. Management training and staff development programs are usually developed and implemented to acclimate all employees to the socio-cultural and structural changes. These programs are implemented via long-range (5-year) organizational planning efforts. They are considered successful if the management and employees are able to demonstrate that the corporate system and the root culture of the organization have been adjusted to obtain the highest productivity possible from a multiracial work force (Thomas Jr., 1991).

Ethno-Centrist Ethno-centric programs seek empowerment via the promotion of socio-structural equality, intra-group pride for individual ethnic populations, and broader recognition of the contributions and characteristics a particular ethnic group brings to mainstream American culture. Advocates of ethno-centric programs, which are identified as "single-group studies" by Sleeter and Grant (1994), seek greater power and control over economic and cultural resources for their particular ethnic group. They argue that often oppressed ethnic group members uncritically accept the status-quo and mainstream messages that depict negative images of the members of their own group. They are often taught that members of their ethnic group rarely make notable achievements, contributions, or political decisions, therefore, members of the group often see themselves as powerless and worthless. Yet they are told that in a free and democratic society, everyone can achieve to the level of his/her own personal potential. This approach thereby lays the foundation for social action by providing information about the group and the effects of past and present discrimination on the group. For example, Afrocentricity is a theory of social change and a method of analysis similar to "phenomenology". It evolves from an analysis and understanding of how African Americans experience the world they live in. Therefore, it is a viable tool for African Americans to solve complex problems relevant to them, e.g., Reagan-Bush "trickle-down" economics, the L.A. riots, the encroaching threat of AIDS, etc. (Fitchue, 1993).

These programs target everyone, but often seek the inclusion of members of the targeted ethnic group, e.g., African Americans, American Indians, Latinos, etc. The programs provide content on the culture of a particular group, how the group has been victimized by the mainstream society, and current social issues facing the group (i.e., from that group's perspective). These programs are delivered via classes, workshops, staff development programs, and the development of institutions and programs, e.g., Afro-American Studies, American Indian Studies, etc. for particular ethnic groups and language minorities. The programs are considered successful if participants demonstrate a "critical consciousness" of the targeted ethnic group's social and economic status and accomplishments, their struggle against oppression, and (for members of the targeted group) increased racial pride. Although these types of programs can be found within educational institutions, they are rare in corporate settings (if they exist at all).

Anti-Racism Anti-racism programs are designed to promote social reconstruction and perspective transformation to eliminate oppression of one racial group by another. This approach deals more directly with oppression and socio-structural inequality than the other approaches presented above. For example, Ogbu (1993) observed that people of color are routinely denied equal access to quality education through societal and community educational practices, and they are denied adequate and/or equal rewards with whites for their educational accomplishments through job ceilings and other mechanisms. Schools further contribute to this unequal treatment via policies and practices, e.g., tracking, biased testing and curricula, and misclassification. Identifying this approach as "education that is multicultural and social reconstructionist", Sleeter and Grant (1994) argue that the programs work toward social justice by teaching political literacy. They seek to help people of color to understand how their ascribed characteristics (e.g., race, class, gender, etc.) and their culture impact on their oppression. This insight should lead them to develop the power and skills to articulate both their own goals and a vision of social justice for all groups, and to work toward these ends.

Anti-racism programs target a variety of clients both within the broader society and within sponsoring organizations. The content for these efforts is organized around race-related issues, utilize students' life experiences as starting points for analyzing oppression, teach critical thinking skills, analyzes alternative viewpoints, and teach social action and empowerment skills. These programs are delivered to clients via incorporation into existing classes (e.g., literacy classes) and staff development programs for managers and workers. The programs are considered successful when a significant decrease in socio-economic barriers for people of color is observed and the proverbial "glass ceiling" is removed. However, like "ethno-centric" programs, these types of programs are rare within corporate settings.

Discussion

During the latter half of the twentieth century both race and ethnicity have emerged as key symbolic issues in highly contested areas of power and influence, such as opportunities for equitable employment and promotion, educational achievement and advancement, and others. As the demographic composition of the workplace has continued to evolve into a multiracial work environment, race and ethnicity problems have been increasingly viewed by management as a significant barrier to productivity. Consequently cultural diversity training programs have emerged as a solution to such problems. However, the most prominent approaches employed in corporate training settings are the top-down management-driven "assimilation-acculturation" and "cultural awareness" approaches to diversity training. These approaches share some common characteristics as learning programs. These programs: a) are easily accommodated by the structural-functionalist approach to education which emphasizes objective, scientifically derived knowledge to develop, implement and evaluate training efforts, b) allow the corporate hierarchy to maintain control of the planning process to the exclusion of potential learners' involvement, c) focus on the individual as opposed to including organizational structures and corporate values as the targets of change, and d) focus on "instrumental" learning outcomes as opposed to either "communicative" or "emancipatory" learning (Mezirow, 1991).

Race-related problems are problems of the heart. They involve deeply held (often tacit) beliefs, attitudes and values about entire groupings of people who are different. The subjective ideas individuals hold about others are not subject to accurate measurement and testing. Therefore, they do not lend themselves to being effectively addressed by the structural-functionalist approach to education and training that is employed by many human resource practitioners. Race-related topics are more conducive to an interpretivist framework that is applied via communicative learning approachs in which the learner actively and purposefully negotiates his/her way through a series of specific encounters by using language and gesture and by anticipating the actions of others (Mezirow, 1991). Of the five approaches presented above, the "multi-cultural" approach comes closest to what is likely management's ideal for effective diversity training in the workplace. That is, it advocates an interpretivist perspective which seeks to diagnose and understand individuals as they exist within the organization's structure and culture in order to create more stable relationships to the benefit of the organization. It advocates learner involvement in planning decisions, focuses on both individuals and organizational structure and culture, and targets communicative learning outcomes.

In addition, both the "ethno-centrist" and "anti-racism" approaches can make significant contributions to the reduction of workplace-based racism. For example, Ponterotto (1988) proposes an ethno-centric four-stage development model for white counselor trainees in which trainees come to acknowledge and accept their own racial identity as well as that of minority individuals. Also, anti-racism training for white educational professionals has been proposed by Corvin and Wiggins (1989), Kailin (1994), and others. However, these types of diversity training programs tend to be viewed by corporate management as high risk and only marginally related to workplace productivity. Because these approaches advocate a "critical" view of education and training they can result in significant transformative learning experiences for individuals who may then seek to address structural and cultural organizational changes.

Conclusion

In efforts to effectively manage multi-racial workplace environments, corporate managers and HRD professionals have utilized only a limited number of diversity training approaches at their disposal. Although assimilation-accuration and cultural awareness type programs might appeal to management's sense of tradition and organizational control, they are the least likely of the five frameworks to provide long-term relief from the racial strife that stimulated their development. The most promising types of programs are those that promote socio-cultural equality and cultural pluralism within the organization, that is, multi-cultural programs. These programs target not only individuals but also the traditions, structure and culture of the sponsoring organization in order to identify and extirpate barriers to developing effective work environment for all employees. The ethno-centrist and anti-racism approaches are appealing in that they focus on developing a stronger knowledge-base of one's racial-ethnic group identification, and they seek to help learners identify how their taken-for-granted attitudes and values can have a racist effect. Although these programs are not currently popular in current workplace training efforts, they appear to be a logical "next step" in efforts to increase multi-racial understanding, and maintain productive work environments.

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HRD Alignment: A Systemic Assessment of HRD in Organizations

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Present evaluations of HRD are almost exclusively conducted on a program-by-program basis. This paper argues that a more systemic approach to evaluating HRD is needed because of the valuable summary information across programs that such an approach offers. The HRD alignment model is described as a model for evaluation that offers a system-wide perspective on HRD in organizations. The components of the model are described and illustrations of its use are provided. The HRD alignment model is shown to have clear advantages over present methods of program-by-program evaluation in providing decision makers with a systemic perspective on HRD's role and overall "alignment" in organizations.

The call for HRD accountability continues as organizations are faced with increasingly sophisticated skill requirements, a more competitive business environment, and tighter corporate budgets. The evaluation of HRD, when it is done at all, is almost exclusively conducted on a program-by-program basis. Yet, are there benefits to generating evaluation data derived from a summary assessment of *all* of an organization's HRD programs? In light of increasingly holistic views of organizations as dynamic systems, an approach to evaluation that allows the assessment of HRD from *a systemic perspective* appears to offer an important alternative to evaluating HRD on a program-by-program basis. The HRD alignment model provides a systemic perspective for assessing all of an organization's HRD programs and yields valuable information about HRD "alignment"--the degree to which HRD contributes to the achievement of the collective goals of the organization.

Conceptual Challenges to the Systemic Assessment of HRD

The evaluation of HRD is concerned with collecting and using information to make judgments about the outcomes, effectiveness, efficiency, importance, or other benefits and consequences of HRD. The evaluation of HRD is necessarily a value-laden process. The term *evaluation* is rooted in the Latin derivative of value--*to be worth.* Evaluation depends, to a considerable degree, on what is valued by the evaluator. A variety of questions can be posed for the purpose of evaluating HRD. What interests and outcomes should be served by HRD? What are the perceptions of various stakeholders in HRD as to the goals and purposes of HRD programs? Are stakeholders' perceptions of HRD's purposes consistent from one person to another? Given the goals of specific HRD programs, to what extent are they achieved? Is personal growth an important outcome of HRD? Is HRD that is intended to improve organizational performance having the desired effects? These are but a few of the broad range of concerns we may have in evaluating an HRD program. These concerns about individual programs also apply to the system-wide assessment of multiple HRD programs offered by organizations.

Yet, several conceptual challenges exist for those who wish to assess HRD from a systemic perspective. A method for generating evaluation data on an organization's HRD programs must be both theoretically sound and easily applied in the workplace. Three conceptual challenges to the development of a systemic evaluation model, all of which must be addressed for a model to be both valuable and practical, are briefly examined next.

First, a summary assessment of HRD that examines programs from a systemic perspective must honor the unique goals and outcomes of specific HRD programs. HRD programs vary as to their purposes, time frames, and intended outcomes. Organizations offer HRD at several levels of the organization and, within each level, HRD can meet a variety of needs. Skills and technical training is offered to employees to enhance their technical competence and work skills, whereas

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management development involves broader content for employees at higher organizational levels. Similarly, the goals of HRD can vary from enhancing the personal development of individuals to increasing an organization's market share. Consequently, the desired outcomes of HRD vary as a function of these diverse goals. The outcomes of some HRD programs are tangible and easily assessed (for example, improvements in the quality of a particular product), whereas the outcomes of other HRD programs are more long-term and abstract (for example, the extent to which an employee is able to integrate work and family). While honoring the unique goals and outcomes of specific programs, a model for evaluation must carefully integrate and summarize assessment data for HRD programs that can be quite diverse.

Second, HRD evaluation should address both the design, processes, and resources used in HRD, and the extent to which the desired outcomes of HRD have been achieved. That is, the evaluation of HRD should in some way address both process issues (formative evaluation) and outcome issues (summative evaluation).

Third, the evaluation of an organization's HRD programs should provide valuable information about the degree to which HRD programs contribute to the achievement of organizational goals. This feature of HRD is what is meant by the term "alignment." The alignment of HRD is the degree to which HRD contributes to the collective goals of the organization. Information on the alignment of HRD with organizational goals is truly of strategic value to top decision makers and all stakeholders in HRD. Strategically aligned HRD addresses the improvement of work performance in areas that contribute to the achievement of important organizational goals.

Present methods of evaluating HRD do not completely address these features and do not allow an assessment of HRD from a systemic, organization-wide perspective. These deficiencies in evaluation methods are summarized in the next section.

Summary of Current Evaluation Methods

The evaluation of HRD, if it occurs at all, can focus on the evaluation of learning outcomes, the evaluation of performance outcomes, and evaluation of programs using financial analysis. A majority of HRD offered in organizations is not evaluated at all, however, and those that are evaluated most often ask for participants' reactions to training. HRD is infrequently evaluated for specific outcomes using systematic evaluation methods (Catalanello and Kirkpatrick, 1968; Wagel, 1977; Mosier, 1990). Program evaluation can occur through an evaluation of instructional processes or "formative evaluation" (Dick, 1977) and through an assessment of the overall effectiveness of programs or "summative evaluation" (Parker, 1986). While evaluations that focus on participant learning and classroom applications provide important feedback about specific programs, these evaluations are insufficient for making broader judgments about the overall effectiveness of HRD and its connection to organizational goals. A four-level hierarchy of evaluation that goes beyond the evaluation of participant "reactions" and "learning" to include the evaluation of "performance" and "business results" was developed by Kirkpatrick (1960). These four levels of evaluation still serve as a viable framework for evaluating HRD. Others models based on Kirkpatrick's four-level hierarchy that emphasize the evaluation of performance outcomes have also been described (Brinkerhoff, 1987; Phillips, 1991; Robinson and Robinson, 1989). Evaluating HRD with financial analysis can be accomplished through utility analysis (Schmidt, Hunter, and Pearlman, 1982), a model for forecasting the financial benefits of HRD (Swanson and Sleezer, 1986; Swanson and Gradous, 1988), using measures of return on investment (Phillips, 1994), and through human resource accounting (Cascio, 1987; Spencer, 1986).

Despite the availability of a variety of evaluation methods, the major shortcoming of present evaluation models is that, on the whole, they overlook the need for a systemic assessment of all HRD programs from a single, holistic perspective. While each of these evaluation methods provides data on the effectiveness of a particular HRD program, no framework exists for assessing the overall strategic position of HRD in an organization. That is, none of these evaluation techniques addresses the need for a *systemic assessment of HRD*--a summary view of HRD's influence across all programs throughout the organization. A systemic perspective of HRD is needed that assesses all of an organization's HRD programs and that yields valuable information about HRD's "alignment"--the degree to which HRD contributes to the achievement of organizational goals.

In order to provide information on the contribution of HRD to organizational goals, a systemic model for assessing HRD must reflect the full organizational context within which HRD occurs. Because the time frame for the desired effects of HRD varies widely depending on the nature of the program, the model should provide information on the temporal dimension of HRD. The model should also be flexible in allowing users to adapt it to their specific needs, for HRD programs are quite diverse and often require program-specific evaluation criteria. HRD alignment provides such a model by affording a systemic perspective of HRD in organizations.

The HRD Alignment Model

HRD alignment is presented as a model that has two major components: (a) the context of HRD Programs, and (b) evaluation criteria for HRD programs. Each of these components of the HRD Alignment model is briefly described next.

The Context of HRD Programs. The context within which HRD occurs can be seen as a function of both the primary purpose of HRD (that is, the degree to which HRD is focused on meeting individual goals, on meeting organizational/business goals, or some combination thereof) and the timeline along which the effects of HRD are expected. The "primary purpose of HRD" and the "time frame of HRD effects" constitute the two dimensions of the model's *Context of HRD Programs* (see Figure 1, The Context of HRD Programs). Each of these dimensions of Figure 1 is briefly described next.

Primary Purpose of HRD (Individual-Organizational Continuum). The primary purpose of specific HRD programs varies widely along a continuum that runs from programs intended to meet individual needs (e.g., personal and family financial planning) to HRD efforts which involve everyone in the organization (e.g., programs dealing with new business plans or structural reorganization). HRD focused on meeting individual needs might include programs in basic literacy and math skills, programs for personal health and fitness, and programs that explore individual learning styles and decision making patterns. HRD with an organizational focus is intended for a wider audience and involves broad issues of organizational change, markets and customers, major cross-functional work systems, and other organizational needs. Depending on the purpose of HRD, the effectiveness of a program is assessed against the goals and needs it was designed to address.

Specifying the primary purpose of HRD *compels us to be explicit about the core purpose* of each HRD program. That is, although an HRD program may offer multiple benefits to participants (e.g., HRD to stimulate the development of new product lines may also promote closer working relationships among participants), we must be clear about the *primary* reason for an HRD program. Most HRD is intended for defined groups of employees such as those of a department or employees at a particular level. HRD can certainly serve more than one purpose. Yet, a compelling need or opportunity ought to exist that ultimately supports and justifies each HRD program. HRD might be more appealing to participants and perhaps more effective in meeting a range of related needs if it addresses several goals within the organization. Yet, we should be able to identify the primary reason an HRD program is deemed important enough to offer in the first place. As shown in Table 1, it is possible to state a primary purpose for each of several HRD programs whether or not they were originally intended to address several purposes or benefits.

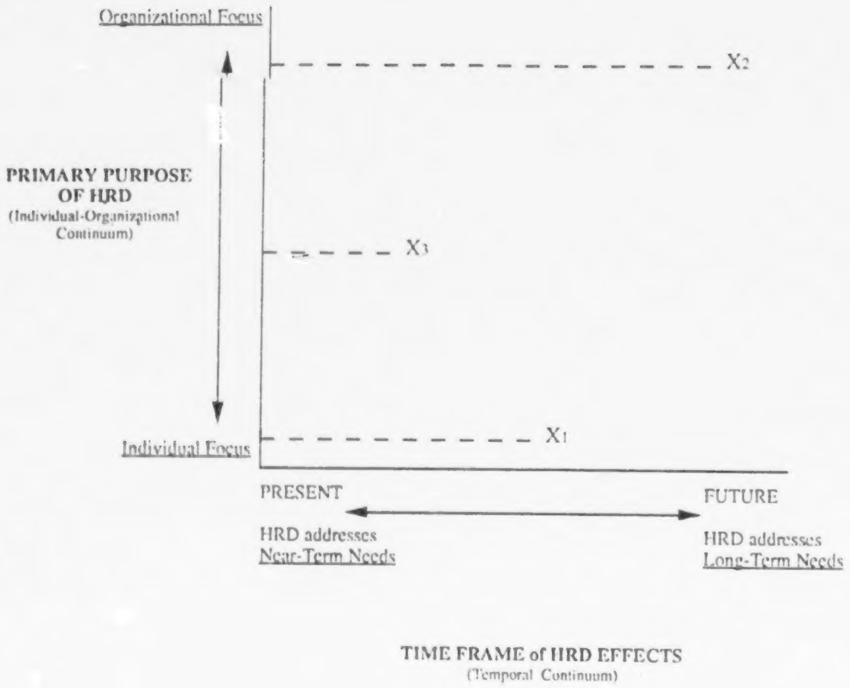
Organizational Focus
X_2
PRIMARY PURPOSE OF HRD
(Individual-Organizational Continuum)
X_3
Individual Focus
X_1
PRESENT
FUTURE
HRD addresses Near-Term Needs
HRD addresses Long-Term Needs
TIME FRAME of HRD EFFECTS
(Temporal Continuum)

Figure 1. The Context of HRD Programs

	HRD Program X_1	HRD Program X_2	. . . .	HRD Program X_n
ANALYSIS Performance Analysis, Context Analysis, Planning, Design				
INTERVENTION Processes, Methods, Resources				
EVALUATION Program Revision, Adoption.				

Figure 2. Evaluation Criteria for HRD Programs

HRD Program	Primary Purpose and Benefit	Secondary Purpose(s) and Benefit(s)
1. Basic statistical methods for quality improvement	• Problem identification, prioritization, analysis	• Promote interpersonal and intergroup cooperation • Promote cross-functional view of process improvement
2. New business development for managers	• Expand current product lines and applications into into promising new areas	• Enhance participants' understanding of competition and market dynamics
3. Workplace adult literacy training	• Higher reading and math levels for more effective communication and computation	• Enhance self-image of participants • Broader foundation for applied skills and enhanced productivity
4. Technical training in advanced production processes	• Acquisition of programming and monitoring skills for customized batch production	• Promote a systems perspective of the interactive and cross-functional nature of process technologies
5. Employee-centered performance management	• Understanding and use of a collaborative approach to employee performance appraisal	• More effective and supportive supervisor-employee relationships • More employee autonomy in goal-setting and performance management

Table 1. Primary and Secondary Purposes of HRD Programs

The primary justifications for HRD programs beyond those given here could easily be added to the list in Table 1. While HRD can and should address multiple needs, we should be able to clearly identify the primary purpose of a program and place it along a continuum that represents the spectrum of individual and organizational purposes served by HRD. Because of the inherent diversity of HRD, programs offered by an organization can be distributed along an "individual-organizational" continuum. Placement of HRD programs along an "individual-organizational" continuum allows a summary perspective of HRD's goals and purposes. When viewed together with other features of the HRD alignment model, the "individual-organizational continuum" of HRD provides a valuable perspective on the overall purposes and effectiveness of HRD in an organization. In this way, the continuum contributes an important dimension to the systemic assessment of HRD.

Time Frame of HRD Effects (Temporal Continuum). The second component of the "context of HRD programs" represents the timeline along which the effects of HRD are expected. This "temporal continuum" along which HRD outcomes occur runs from the present to the foreseeable future. Specifying the expected time frames of HRD programs is important for two reasons. First, a systemic perspective of HRD's overall position within the organization allows stakeholders and decision makers to visualize the temporal dimension of HRD's contributions to the organization. Time frames and scheduling are critical to business success, and temporal considerations are an important part of the on-going decision making activities necessary for all core functions within the organization, including HRD. Using time as a common denominator for business planning, the "time frame of HRD effects" provides decision makers with a broad and informative estimate about when the outcomes of HRD are expected to materialize.

Second, there should be approximate symmetry in the overall distribution of HRD programs along the temporal continuum. That is, there should be some balance and proportion reflected in the timing of HRD's effects along the temporal continuum. HRD that truly supports business activities will yield both near-term and long-term outcomes. For example, HRD that addresses near-term needs might involve employee training to support the introduction of new production equipment or computer software. In this case, the outcomes of HRD should occur in the near-term as expected with much of the training for the acquisition or improvement of job and task-related performances. HRD programs to meet long-term needs address outcomes which occur gradually and may not be fully realized until a year or more after the program, as expected with HRD-supported initiatives directed at new business development, organization restructuring, and the establishment of autonomous work groups.

In general, HRD that supports a broad range of organizational needs and opportunities should be more or less evenly distributed across the temporal continuum. A range of HRD programs that reflect a variety of purposes (for example, HRD that meets personal development needs, operational business demands, and that supports long-term planning and change) will be well represented along the entire temporal continuum and will project a balanced image to observers. Viewing the overall time frame of HRD effects offers an important perspective on the overall alignment of HRD in the organization. Stakeholders in HRD should become concerned if HRD is unevenly focused on issues and outcomes on one end of the continuum to the exclusion of those at the other. That is, HRD should not be too heavily focused on either near-term or long-term objectives. HRD that is predominantly near-term in nature raises the question "Is the overall focus of HRD too short-sighted?" HRD that is predominantly long-term in nature raises the question "Is HRD truly relevant to present business challenges?" HRD that supports a broad range of needs should reflect balance along the temporal continuum.

Examples of the Diverse Contexts of HRD. Three HRD programs that reflect diverse purposes and time frames are represented in Figure 1 as programs "X1," "X2," and "X3." Programs X1, X2, and X3 are examples of the variety of contexts within which HRD programs exist. Program X1 is HRD intended for the personal development of individuals with an intermediate range time frame for expected effects. A program to enhance employee self-knowledge based on the use of an instrument such as the Myers-Briggs Type Indicator is an example of this type of HRD. Program X2 is HRD focused on organizational goals for which effects are expected to occur gradually over the long-term. HRD primarily directed at improving the overall quality of products and services through the principles and practices of total quality management (TQM) is an example of this type of long-term, broad-based HRD. Program X3 is HRD that exists in the middle of the individual-organizational continuum and that has a relatively short time frame for expected effects. Technical training in the use of a new, interactive spreadsheet program for employees who work with on-line production and inventory systems is an example of this type of HRD. Each of these three examples reflects a distinctive set of HRD purposes and time frames. The purposes and time frames for each program illustrate how the context of HRD can vary significantly from program to program.

Evaluation Criteria for HRD Programs. The second major component of the HRD alignment model is a framework for specifying the evaluation criteria for HRD programs. This component allows the user of the model to select among a wide variety of criteria for evaluating HRD programs. Because the purposes of HRD programs vary, the criteria used to evaluate program effectiveness vary. Yet all HRD interventions to affect learning and change share fundamental structural components. These basic components of HRD programs are analysis, intervention, and evaluation. All HRD programs, regardless of their scope, purpose, time frame, or intended audience, must be grounded in some type of basic analysis of need. Regardless of whether a program is directed at enhancing the personal development of individuals or the market share of organizations, the design of HRD is purposefully based on an analysis of the expertise that is (and is not) needed to affect desired outcomes. In addition to requiring analysis, all types of HRD are interventions. HRD programs are vehicles for change based on the behavioral sciences that assume specific structures, processes, and methods that are program and content-specific. The specific methods used are consistent with the outcomes to be achieved. Assessment of HRD as an intervention examines ways in which the processes and methods of HRD can be improved and revised. As interventions based on analysis, HRD should also be evaluated for information on its instructional integrity and its overall effectiveness. This component addresses summative evaluation questions, such as "Should a program be adopted or not" and "Is a program cost-beneficial?"

Each of these three components of HRD--analysis, intervention, and evaluation--constitutes an important dimension through which HRD of all types and contexts can be evaluated. These three components are represented along the vertical axis of the evaluation matrix shown in Figure 2. All HRD programs to be assessed on these three dimensions are placed along the horizontal axis at the top of the matrix (see Figure 2, Evaluation Criteria for HRD Programs). Within the three basic components of analysis, intervention, and evaluation, users of the HRD alignment model identify evaluation criteria specific for each HRD program. Some categories of general measures that can be used for specifying evaluation criteria for individual programs are given in Table 2.

- ANALYSIS of:
    - Context of HRD (who, what, when, where, how, why)
    - Prior HRD of relevance
    - Key causes or determinants of performance
    - Interest and support among stakeholders in HRD
    - Probable benefits and outcomes; and
    - Available resources and costs of HRD
- INTERVENTION based on:
    - Behavioral objectives
    - Capabilities to be learned
    - Appropriate learning methods, materials, and media
    - Optimal interpersonal and intergroup dynamics
    - Processes for affecting individual and group change
- EVALUATION of:
    - Outputs
    - Time
    - Efficiency
    - Work Habits
    - Work Climate
    - Skills Developed
    - Learning Achievement
    - Costs
    - Quality
    - Effectiveness
    - Feelings/Attitudes
    - Self-knowledge
    - Personal Growth
    - Other Measures
- EVALUATION by:
    - Customers/Clients
    - Supervisors
    - Peers
    - Self
    - Subordinates
    - Other Stakeholders

Table 2. Sources of Evaluation Criteria

For example, the "analysis" component for HRD may be assessed through criteria identified by the user of the model in areas such as performance analysis, data collection, planning, and design. Similarly, the "intervention" component can be assessed through evaluation categories for methods, processes, resources, or other categories related to the HRD intervention deemed relevant by the user. The evaluation component of the vertical axis can also be customized to meet the user's needs. The user can identify relevant criteria for specific programs from a wide variety of evaluation criteria that have been developed for similar programs, some sources of which are listed in Table 2. Program-specific evaluation criteria are entered in the cell which corresponds to the appropriate structural component of an HRD program. Within an organization, diverse HRD programs that meet a variety of needs can thereby be evaluated within a single framework. An example of how this evaluation framework might be used is provided in the next section.

Assessing Diverse HRD Programs within a Single Framework. In this section, two HRD programs that reflect quite different purposes will be briefly examined and then placed within the *Evaluation Criteria for HRD Programs* framework to illustrate its use for assessing diverse HRD programs. HRD that makes a key contribution to organizational performance, such as the accomplishments of a well-conceived TQM effort, is likely to win the interest of top management. Yet not all HRD can or should be directed solely at improving measures of organizational performance. HRD provided for the personal development of employees, even in areas that offer no immediate work applications, have enrichment value for individual employees and can enhance the overall morale, productivity, and longevity of the workforce. Two diverse HRD programs--one focused on TQM-based quality improvement efforts and the other focused on enhancing employee self-knowledge through the Myers-Briggs Type Indicator--are described next. Evaluation criteria for each of these programs are also provided.

TQM Training. The example of TQM training used here is that of an HRD-supported effort to maximize employee involvement in decision making and accountability for quality and customer satisfaction. As with any effort to improve work performance, the HRD function and management collaborate within a systems framework to add value and improve work efficiency. In addition to developing process improvement expertise, HRD is used to reinforce systems thinking, broaden employees' business perspectives, and enhance the self-direction of employees as they assume broader, most flexible work roles. While the effectiveness of individuals and groups are enhanced through such interventions, the primary purpose of this effort is to improve the overall quality of products and services at the organizational level.

A Personal Development Program. The benefits of HRD focused on the personal development of employees may not be immediately evident or quantifiable, but they are no less valuable to individuals and organizations than the benefits of training with more tangible outcomes. A program to enhance employee self-knowledge, such as one based on the Myers-Briggs Type Indicator (MBTI), allows employees to discover their perception and decision making patterns and to identify new ways of expressing their interests and abilities. In exploring the unique psychological traits of individuals with respect to motivation, learning styles, and patterns of perception and judgment, the MBTI offers the individual new insights into how they perceive and deal with the world. Employees participating in such a program identify their psychological types and apply their insights to their own interpersonal relations, problem solving methods, and career preferences.

The purposes, methods, and outcomes of these two HRD programs are quite distinct from one another. The TQM-based effort seeks specific improvements in product quality and customer service as evidenced in tangible measures of product quality and customer feedback. HRD serves a central role by expanding employee expertise in systems thinking, product knowledge, and relevant technical skills. On the other hand, the development of employee self-knowledge through psychological tools, such as the MBTI, seeks to expand the inner resources of individual employees. Personal insight is enhanced and applications of broader self-knowledge to personal, family, job, and career issues are encouraged. For this program, no claim is made that it will result in tangible improvements in organizational performance.

Diverse HRD programs such as the two described here can be assessed within the same framework using the evaluation matrix represented in Figure 2. The *Evaluation Criteria for HRD Programs* matrix offers a summary perspective of HRD once evaluation criteria and supporting data for each HRD program have been entered into the appropriate cells of the matrix. Data is entered by first writing the name of each HRD program at the top of each matrix column, followed by a cell-by-cell listing of evaluation criteria for the "analysis," intervention," and "evaluation" components along the vertical axis. Once this data has been entered for all HRD programs being assessed, the evaluation matrix is complete. An example of an evalution matrix completed with data for the TQM training and the MBTI personal development program is presented in Figure 3.

As can be seen by comparing the evaluation criteria for the MBTI program and the TQM training, the purposes and outcomes of these programs are indeed quite diverse. The assessment of diverse programs within a single framework exposes fundamental differences in the values and interests served by such diverse types of HRD. Important questions arise through examining

	HRD Program X_1 Personal Development MBTI	HRD Program X_2 TQM Training	. . . .	HRD Program X_n
ANALYSIS Performance Analysis, Context Analysis, Planning, Design	• Levels of Program Interest and Need • Number and Profile of Participants • Data on Desired Content and Format	• Complete analysis of quality (performance) determinants • Cultural readiness for TQM training • Appropriate plans and timeframe established		
INTERVENTION Processes, Methods, Resources	• Adequacy of Prerequisites • Balance in Learning Activities: Individual vs.. Small Group • Relevance of Applications and Program Follow-up	• Balance of basic and applied TQM methods • Effectiveness of team development • Resources and reinforcement for employee self-direction		
EVALUATION Program Revision, Adoption,	• Self-knowledge • Application to Personal Life and to Work Issues • Other Learning and Personal Growth • Evaluation by Self & Others	• Measures of product/service quality • Efficiency of throughput • Customer satisfaction • Work climate and team cohesiveness		

Figure 3. An Example of HRD Evaluation Criteria

Figure 3 about the role of HRD in organizations and the interests it serves. Does HRD exist to help the organization meet important business challenges that must be addressed if the organization is to survive? If so, does HRD have a further role in meeting a whole tier of personal development needs at the level of the individual employee? Indeed, HRD that meets diverse interests and outcomes can and should be sponsored within the same organizations. Yet most HRD is provided without attempts to evaluate it, and when it does occur, evaluation is accomplished in a piecemeal, program-by-program fashion. Thus, there are few opportunities to assess diverse HRD programs in a systemic fashion. Examining the evaluation matrix in Figure 3 helps remind us that evaluation is a necessarily value-laden process. Regardless of our personal ideological position on the proper role of HRD in organizations, the evaluation of HRD should allow the diverse values and interests it serves to be made explicit. The evaluation matrix of the HRD alignment model (Figure 2) affords this expression of HRD's diversity.

A Systemic Perspective of HRD

The overall alignment of all HRD programs in an organization is determined using the combined perspectives offered by the two major components of the HRD alignment model. *The Context of HRD Programs* model (Figure 1) allows users to view the focus and time frame for effects of all HRD programs in a single chart. This allows the relative positions of HRD programs on these two dimensions to be assessed at one time. The *Evaluation Criteria for HRD Programs* model (Figure 2) allows individual HRD programs to be assessed using criteria specific to each program, and does so in a way that allows a summary assessment of all HRD programs. Together the two components of the HRD alignment model provide users with a system-wide perspective on HRD that is not possible with program-by-program evaluation of HRD.

The HRD alignment model is used to examine multiple HRD programs in organizations to gain more systemic insights into HRD organizational roles and "HRD alignment"--degree of HRD's contribution to organizational goals. Top decision makers and other key stakeholders in HRD can compare the "context" positions of HRD programs in Figure 1 and quickly assess the strengths and weaknesses of each program using program-specific evaluation data in Figure 2. Trends, clusters, and omissions in the context of HRD programs (for example, the absence of long-range, organization-focused HRD, or a wealth of near-term, individual-focused HRD) are easily seen in the model, as are the relative strengths and weaknesses of each program. The primary purposes of HRD programs may be clustered within a particular quadrant of Figure 1 to the neglect of other needs within the organization. These program trends, clusters, and omissions represent valuable indicators of HRD's orientation in the organization that are not apparent with program-by-program evaluation of HRD. When the "context" positions of several programs are plotted in Figure 1, overall patterns in the positions of HRD programs emerge that guide decision making on HRD's role and future direction. HRD that occurs without regard to such a systemic perspective runs the risk of becoming irrelevant, particularly in today's rapidly changing business environment. HRD alignment, or the degree of HRD's contribution to achieving organizational goals, ought to be readily discernible if HRD is to continue to play a central role in sustaining the human expertise needed for organizational performance. The HRD alignment model provides decision makers with a systemic perspective on the interests served by HRD and its contributions to organizational goals.

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HRD Policy making in companies: an interpretation of the differences

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Effective HRD policy making processes in companies are necessary for realizing effective HRD interventions. To gain more insight in this process an explorative survey has been started up. In this paper some of the findings are presented. Specific strategic choices as a result of the HRD policy making process were found, as well as affecting company characteristics. The results also indicate that the HRD policy-making process is capable of improvement in some or even all indicators of this procedure.

Effective HRD interventions are tuned to developments and problems in the company, in order to enhance the performance of individuals, departments or the company as a whole. To determine the right HRD goals and objectives and the most appropriate HRD activities, a process of strategic tuning to the specific company must precede these interventions. This process of strategic tuning or HRD policy making encompasses the assessment of the desired HRD goals and objectives, the so called planned results, and leads to strategic choices for effectuating these planned results. The process of assessing the HRD goals and objectives must take place with the participation of all relevant stakeholders on the various levels in the company. The strategic choices consist of particular choices of employees being trained or developed, and choices of HRD interventions for training and developing the selected categories of employees. Literature indicates that the HRD policy making processes in companies vary. Differences may occur as a result of the problems or developments which give rise to the HRD policy making process and reveal themselves in the above mentioned strategic choices. Literature also indicates that differences may be related to some characteristics of the company and of the HRD department in which the HRD policy making process is taking place. To gain more insight in the HRD policy making process in companies and in particular in relevant differences and affecting characteristics, an explorative survey has been started up in January 1994.

Problem Statement and Conceptual Framework

The key problem statement of the performed research project runs as follows: *In what way do the HRD policy making process in companies vary?* In this study HRD policy making is defined as the assessment of HRD goals and objectives in a process of strategic tuning to the company, so that the resulting HRD interventions are aligned to the problems and developments of the company. The strategic tuning process can be characterized by some indicators (Wognum, 1994). One of those concerns the level and participants involved in the initially strategic tuning process. HRD goals and objectives can be formulated on each of the three levels of the company, i.e.: the strategic level with top management as primary stakeholder, the tactical or structural level with middle management and the operational level with lower executive management and individual employees as primary stakeholders (e.g. Rummler, 1987; Kaufman, 1990). Strategic policymaking takes place in theory on all three levels, according, among others, to De Leeuw (1988).
A second indicator concerns the procedure of strategic tuning, and more specific: the nature of this procedure, related to the more or less interactive or formal way of stakeholder's contribution or even the absence of it (see a.o.: Harrison, 1991; Kaufman, 1986; London, 1989). Another indicator

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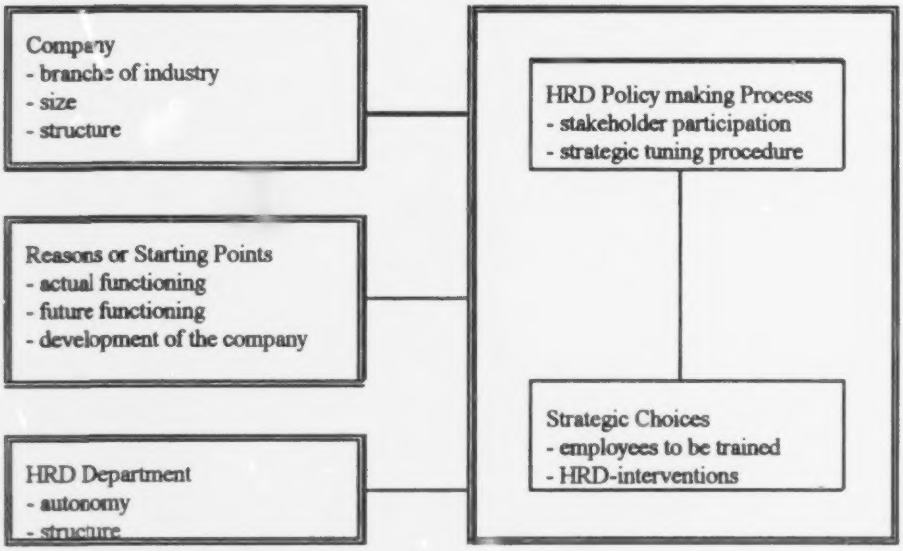
concerns the reasons or starting points for the HRD policy making process and determining the HRD objectives. These reasons may be divided into three categories, related to the actual functioning of employees, departments or the company as a whole, the future functioning of the employees (career planning and development) and the development of the company as a whole, supporting for example changes in policy, product or production (see Brinkerhoff, 1987; Rossett, 1987, Wognum, 1994). The HRD policy making process leads to strategic choices, i.e. the choice of employees to be trained or educated, and the choice of needed HRD interventions and activities. Refering to Mintzberg six categories of employees on the various levels in the company are distinguished: top, middle and lower executive management, employees in the operating core, employees in the supporting staff, and others (Mintzberg, 1983). A group of eight categories of possible HRD interventions, broken down by subject category, is derived from the literature (among others: CBS, 1993). The categories are: management techniques, production process, social and learning skills, health and security, automation and computerization, marketing and public relations, accounting and finance, and others. The HRD policymaking process is likely influenced by characteristics of the company and the HRD department (Dekker & Wognum, 1994; Ford, Major, Seaton and Krifcher Felberc, 1993). A characteristic of the company is the branche of business, in order to characterize the kind of company and to some extent the kind and complexity of the core processes (Van Hulst & Willems, 1992; Dekker & Wognum, 1994). Another characteristic is the structure. In centralized companies the starting points for the HRD policy-making process and the resulting strategic choices may differ from those companies with another, more decentralized structure (Wognum, 1991). A third characteristic is the size of the company (Mulder, Akkerman & Bentvelsen, 1988). Mintzberg also pointed out that the size of the company is related to policymaking processes (Mintzberg, 1983). The autonomy of the HRD department (independent or placed under the responsibility of other groups) seems to be an important characteristic of the HRD department, so is also the structure of the HRD department. A centralized department normally covers the whole organization, a decentralized department covers a unit or part of the organization and is mostly supported by a central HRD department (London, 1989).

In figure 1 the conceptual framework is visualized.

Figure 1: conceptual framework


Company
- branche of industry
- size
- structure
Reasons or Starting Points
- actual functioning
- future functioning
- development of the company
HRD Department
- autonomy
- structure
HRD Policy making Process
- stakeholder participation
- strategic tuning procedure
Strategic Choices
- employees to be trained
- HRD-interventions

Research Questions

In this study it is hypothesized that each category of problems or developments in specific companies, seen as reason or starting point for HRD, requires different HRD policy making processes and leads to different strategic choices. Strategic choices become visible in the effectuated HRD interventions in companies. Thus, the problem statement leads to the following main research question: *Which (in 1993) realized HRD interventions may be discerned in companies, what was the reason behind these interventions and in what way do HRD policy making processes vary?*

The following questions are derived from the main research question:

1. What strategic choices (categories of trained or educated employees and categories of HRD interventions) are made in companies?
2. What was the reason or starting point behind the realized strategic choices in companies?
3. Which stakeholders are involved in the HRD policy making process and what is the perception of the responsible HRD official of the strategic tuning procedure (the so called tuning perception)? (In this explorative study the procedure itself is not part of the research.)
4. Is there a relationship between those realized strategic choices and the tuning perception of the responsible HRD official?
5. Do characteristics of the company and HRD department explain some of the results?

Methodology

In order to answer the research questions a survey was carried out in the first months of 1994. In order to collect the data companies with more then 500 employees were selected from a national database. Another selection criterion was the branche of business, i.e. Industry, Transport, Storage and Communication (Transport), and Banking, Insurance Business and Commercial Services (Banking). Thus 199 companies in total were selected. Data were collected by means of a questionnaire sent to the responsible HRD officials working in these 199 companies. The questionnaire was designed to collect information derived from the above described conceptual framework, i.e. information on (1) the employees being trained or educated (grouped into the aforementioned six categories), (2) the performed HRD interventions or activities (classified into the earlier mentioned eight categories), but also on (3) the problems or developments which give rise to the HRD policy making process (three categories) and (4) some characteristics of the company (branche of business, number of employees, structure of the company) and the HRD department (autonomy and structure) in which the HRD policy making process has taken place. Also four questions were formulated to gain information about the strategic tuning procedure (concerning the participants in and the perception of the procedure). The questions had precoded answers. There were a total of 127 responses of which 106 were usable for the analysis. In order to answer the stated research questions, descriptive statistics and analysis of variance were used to analyse the data.

Results

The survey was intended to gain insight in some aspects of the HRD policy making process and resulting strategic choices in the studied companies, by answering the aforementioned research questions. The analysis of the results on the variable 'other HRD interventions' gave reason to construct a ninth subject category, namely 'quality'.

What strategic choices (categories of trained or educated employees and categories of HRD interventions) are made in companies?

In table 1 the numbers and percentages are presented of the strategic choices the companies have made. Most of the 106 companies have arranged HRD activities for the middle management (94,3%), the lower management (93,4%) and the employees in the operating core (94,3%). Fewer companies train or educate the topmanagement (56%) or the supporting staff (51,9%). Mainly the tactical and operational level in companies were considered for HRD activities. This is confirmed by looking at the number of subject categories of HRD interventions. The research findings indicate that middle management was trained in the average of 4.20 subject categories (M=4.20, SD=1.96). Also the lower management (M=3.94, SD=1.81) and the employees in the operating core (M=3.17, SD=1.62) have received training in more then one subject category. Other employees on the contrary have got training in less subject categories (top management, M=1.08, SD=1.39; supporting staff, M=1.16, SD 1.62; other groups M=.32, SD=.97). Table 1 shows those subject categories of HRD interventions related to the several categories of employees. Topmanagement was mainly trained or educated in management techniques (in 80.4% of the 56 companies this was the case). Other subject categories were less relevant. The four main categories for the middle management are management techniques (92%), social and learning skills (75%), automation and computerization (65.0%) and marketing and public relations (55%). Lower management was mainly trained in management techniques (78.8%), social and learning skills (76.8%, automation and computerization (64,6&), and unlike middle management, HRD programs in production process (48.5%) and health and security (48.5%) equally. Of all categories of employees, those in the operating core mainly received HRD programs on production processes (in 73% of all companies which trained these employees). The main categories of HRD interventions per group of employees seem to be related to the specific tasks each group has to perform in the company. The other HRD interventions are likely less related to these specific jobs and tasks.

Table 1: Numbers and percentages of strategic choices in companies (multiple response)

			Categories of HRD interventions*)								
	N	%	mng	pro	soc	hea	aut	mar	acc	qua	oth
			%	%	%	%	%	%	%	%	%
categories of employees											
top management	56	52.8	80.4	8.9	28.6	12.5	8.9	23.2	25.0	5.4	12.5
middle management	100	94.3	92.0	36.0	75.0	48.0	65.0	55.0	47.0	8.0	20.0
lower management	99	93.4	78.8	48.5	76.8	48.5	64.6	42.4	38.4	5.1	18.2
operating core	100	94.3	10.0	73.0	41.0	50.0	64.0	39.0	35.0	5.0	20.0
supporting staff	55	51.9	18.2	14.5	36.4	27.3	43.6	30.9	23.6	5.5	23.6
others	18	17.0	16.7	16.7	33.3	33.3	11.1	27.8	16.7	-	33.3

(N=106)

*) Categories of HRD interventions
mng : management techniques
pro : production process
soc : social and learning skills
hea : health and security
aut : automation and computerization
mar : marketing and public relations
acc : accounting and finance
qua : quality
oth : others

What is the reason or starting point for the HRD policy- making process and resulting strategic choices?

Table 2 gives percentages per reason or starting point for the HRD policy making process. In companies which have trained top management and members of the supporting staff the main reason was the development of the company as a whole (respectively 57.1% and 58.2%). These are indeed the categories of employees charged to manage and support the renewal processes. In companies where middle and lower management were trained this reason turned out to be important too (69.0% and 59.6%) but it was not the main starting point for training these groups of employees. As for employees in the operating core the reason of the actual functioning of employees stood central (middle management 87%; lower management 88.9%; operating core 88%). The actual functioning is important, in order to produce the products or services of the company and effectuate the performance standard of the company.

Table 2: Numbers and percentages of starting points for strategic choices in companies (multiple response)

			*) Starting points for HRD policy-making			
	N	%	act %	fut %	dev %	oth %
categories of employees						
top management	56	52.8	32.1	39.3	57.1	12.5
middle management	100	94.3	87.0	83.0	69.0	5.0
lower management	99	93.4	88.9	78.8	59.6	4.0
operating core	100	94.3	88.0	69.0	44.0	4.0
supporting staff	55	51.9	47.3	41.8	58.2	3.6
others	18	17.0	38.9	44.4	27.8	16.7

(N=106)

*) Starting points for HRD policy-making
act : actual functioning of employees, departments or the company as a whole
fut : future functioning of employees (career planning and development)
dev : development of the company as a whole
oth : others

Which stakeholders are involved in the HRD policy making process and what is the perception of the responsible HRD official of the strategic tuning procedure (the so called tuning perception)?

Table 3 presents an overview of the stakeholders involved in the tuning procedure. In 83% of all 106 companies the supervisor of the trained employees was involved in the tuning procedure in order to adjust the HRD activities to problems and developments in the company. Middle management was involved in 68.9% and the employees to be trained in 52.8%. Notice that in 73.6% of the companies top management is involved in one way or another. In a great deal of the companies several of the given categories of stakeholders were involved. This is an indicrtions of the involvement of participants from each of the three levels in the company.

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Table 3: Numbers and percentages of companies with the mentioned stakeholders involved in the tuning procedure (multiple response)

	N	%
involved stakeholders		
other training official	35	33.0
employees to be trained	56	52.8
supervisor	88	83.0
middle management	73	68.9
top management	78	73.6
others	13	13.3

(N=106)

Table 4 presents an overview of the tuning perception of the applied HRD officials. The tuning perception means the perception of the respondents of the performed strategic tuning procedure. This procedure was broken down into three indicators, concerning the improvement of stakeholder involvement and the tuning process itself, and also the willingness of management to be more involved in the tuning procedure. In this study the perception of respondents of all the three indicators was examined. Cronbachs Alpha of the tuning procedure was .76. An equal percentage of the respondents is discontent or almost content with the strategic tuning procedure (22.6%). This means that at least one of the indicators of the tuning procedure needs some improvement. A greater percentage of the respondents is more discontent (33%) and thinks of an improvement of all the three indicators of the tuning procedure. Also 23% is content with the strategic tuning procedure in their companies. Table 4 shows that the responses are equal divided over the four indicators of the tuning perception.

Table 4: Tuning perception in companies

	score	N	%
tuning perception			
more discontent	3	35	33.0
discontent	2	24	22.6
almost content	1	24	22.6
content	0	23	21.7

(N=106, M=1.67, SD=1.15)

Is there a relationship between the realized strategic choices and the tuning perception of the responsible HRD official?

Table 5 presents differences in tuning perception between companies. Only the significant differences at the .05 level are presented. This was not the case in companies where HRD interventions were developed in order to train some specific category of employees. Significant differences were found when companies have chosen to offer some specific HRD interventions. In companies for example where employees were trained in management techniques, respondents were found more discontent (M=1.75, SD=1.13) than in companies which did not offer these kind of HRD programs (M=.62, SD=.91) (F=7.55, p<.025). The same is the case with HRD programs on social and learning skills (F4.26, p=<.05), marketing and public relations (F=8.83, p=<.025) and accounting and finance (F=4.71, p<.05). Also a significant difference in tuning perception was found between companies where company development was the reason for HRD policy making or not. In companies where this reason stood central respondents were more discontent (M=1.78, SD=1.13) than in companies with other starting points (M=1.15, SD=1.11) (F=4.73, p<.05). Perhaps a more tailored tuning procedure is needed in companies with this starting point and the four mentioned categories of HRD interventions, than in companies with other starting point and HRD programs?

Table 5: differences in tuning perception between companies if strategic choices and starting points are existing or not

	Tuning perception if existing		Tuning perception if not existing			
Variables	M	SD	M	SD	F	P
category of HRD interventions						
management techniques	1.75	1.13	.62	.91	7.55	.00**
social and learning skills	1.77	1.16	1.16	.98	4.26	.04*
marketing and public relations	1.90	1.11	1.22	1.09	8.83	.00**
accounting and finance	1.87	1.09	1.38	1.18	4.71	.03*
starting points						
development of the company	1.78	1.13	1.15	1.11	4.73	.03*

* P < .05
** P < .025

Do characteristics of the company and HRD department explain some of the results?

The HRD policy making process is likely influenced by characteristics of the company and the HRD department. The branche of business for example characterizes to some extent the kind and complexity of the core processes. Does this characteristic explain some of the strategic choices in companies? Table 6 reveals some of the differences found in those choices between companies of several branches of business. Only the significant differences at the .05 level are presented. In the Industry branche for example more companies have trained the middle management (M=.96, SD=.17) than in the Banking branche (M=.75, SD=.46) or in the Transport branche (M=.94, SD=.23) (F=3.25, p<.05). Also the same kind of differences between branches were found when lower management was trained (F=.424, p<.025) and employees in the operating core (F=3.25, p=<.05). In the Industry branche more companies did offer HRD programs on production process (M=.82, SD=.38) than in the Banking branche (M=.55, SD=.50) or the Transport branche (M=.62, SD=.51) (F=4.41, p<.01). This was also the case with programs on health and security (F=5.17, p=<.025).

On the contrary, the Banking branche offered significantly more HRD programs on marketing and public relations (M=.80, SD=.40) than the Transport Branche (M=75, SD=.46) or the Industry branche (M=56, SD=.49) (F=3.20, p=<.05). Thus the results indicate the Branche of Business as an important characteristic. Another characteristic is the structure of the company, centralized or for example decentralized. Also this characteristic turned out to be an important one. Top management was trained significantly less (F=4.25, p=<.05) in companies with a centralized structure (M=.40, SD=.49) than in companies with other structures (M=.61, SD=.49). This characteristic is important too in the case of some HRD intervention categories, i.e. accounting and finance (F=5.05, p<.05) and quality (F=5.07, p=<.05). The size of the company has influenced the offering of HRD programs on health and security, marketing and public relations, and other subject categories. Companies with more than 1000 employees for example offered more marketing programs (M=.86, SD=.35) than companies with 750-1000 employees (M=.54, SD=.50) or with less than 750 employees (M=.42, SD=.50) (F= 11.49, p= <.025).

Table 6: Differences in strategic choices between the companies per branche of business

	Industry		Transport		Banking			
Variables	M	SD	M	SD	M	SD	F	p
category of employees								
middle management	.96	.17	.75	.46	.94	.23	3.25	.04*
lower management	.98	.12	.75	.46	.88	.31	4.24	.01**
operating core	.96	.17	.75	.46	.94	.23	3.25	.04*
category of HRD interventions								
production process	.82	.38	.62	.51	.55	.50	4.41	.01*
health and security	.80	.39	.50	.53	.52	.50	5.17	.00**
marketing and public relations	.56	.49	.75	.46	.80	.40	3.20	.04*

* P < .05
** P < .025

Characteristics of the HRD department however did not show any significantly different strategic choices. Also no significant differences at the .05 level were found in tuning perception influenced by characteristics of the company and HRD department.

Conclusion

The effectuated strategic choices in companies, i.e. the choice of employees to be trained or educated, and the choice of the needed HRD interventions, are the outcomes of the foregoing HRD policy making process. The research findings gave an indication of differences in the effectuated strategic choices. The founded emphasis on the tactical and operational level in companies confirm earlier research findings (Wognum, 1994). The research findings also indicate that the policy making proces is capable of improvement. A great deal of the respondents is not content with the strategic tuning procedure, and thinks of an improvement of some or even all indicators of this procedure. Perhaps this has something to do with the main reason or starting point for the HRD policy-making process in companies. The findings indicate differences in the main starting point for the several categories of employees. In companies werein top management and members of the supporting staff were trained the main reason was the development of the company as a whole. For middle and lower management and employees on the operating core the main reason was in the actual functioning. But a lot of changes in policy, product or production in companies do occur, and this makes the development of the company a very important starting point, perhaps even more than the other two mentioned reasons (actual and future functioning). Also a significant difference in tuning perception was found when company development was the reason for HRD policy making or not. In companies where this reason stood central respondents were more discontent than in companies with other starting points. A more tailored tuning procedure is probibly needed in companies with this starting point and the four mentioned categories of HRD interventions, than in companies with other starting point and choosen HRD programs. The research findings also point to characteristics of the company (mainly the branche of business and the size of the company) causing differences in strategic choices, and therefore probably in the foregoing strategic tuning procedure itself. These findings justify the further study of the HRD policy making process in companies in search of effective types of HRD policy making processes in companies. This is necessary in order to realize effective HRD interventions and improve the performance of individuals, departments or the company as a whole.

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The Impact Map: A Versatile Tool to Link HRD with Business Outcomes

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HRD professionals are looking for ways to make connections between their efforts and business results. The impact map is a tool that illustrates links between the skills and knowledge learned in HRD programs and actual behaviors on the job. Further, it displays the results of those behaviors and relates those results to business objectives. The impact map can be used in the needs assessment, design, implementation, and evaluation stages of an HRD intervention.

Cost cutting and corporate restructuring have hit most businesses, forcing them to make painful decisions regarding staffing and budgets (Zwolfer, Thomas, Institute of Management Studies, York, & Henderson-Peter, 1994). What can human resource development (HRD) professionals do to help? They can become true business partners by aligning their programs with business needs, problems, or opportunities and ensure that these links are clearly understood by management before the programs are implemented (Brinkerhoff, 1987; Brinkerhoff & Gill, 1994; Filipczak, 1994; Kramlinger, 1993; Robinson & Robinson, 1989; Swanson, 1994).

Key questions facing the HRD practitioner include: How can I work collaboratively with business managers to maximize the benefits of HRD programs? What theories, models, and tools are available to help me link HRD efforts with business outcomes? The purpose of this paper is to discuss the Impact Map as a versatile tool for HRD practitioners. This discussion will integrate information from systems theory, instructional design theory, performance technology, transfer of training research, strategic alignment processes, and consulting models, as well as knowledge gained from practical experience.

Literature Summary

Although there has been increased discussion in the last few years about applying systems theory in organizations (Senge, 1990; Wheatley, 1992), systems thinking has long been the foundation for the field and practice of human resource development. Instructional design models are system models, indicating the interrelationship between analysis, design, development, implementation, and evaluation of learning systems. Human performance technology, the field of improving individual and organizational performance, is based on systems theory in a number of ways (Stolovitch & Keeps, 1992). For one, it looks beyond training as the automatic solution for all workplace performance problems. Performance improvement professionals recognize that there are many interrelated factors that affect an individual's job performance, including skill, knowledge, incentive, practice, and feedback (Mager & Pipe, 1984). They take a systems view of diagnosis, recognizing that human performance is affected by factors at three levels: (1) the job/performer level, related to job outputs, (2) the process level, related to business processes and work flow, and (3) the organization level, where strategy provides the direction and organizational structure (Rummler & Brache, 1990).

Performance improvement professionals recognize that a good analysis is required for a good solution (Swanson, 1994). Whether the diagnosis is being conducted for present problems or for future plans, it involves identifying the current performance and the desired performance and the

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reason for the gap. Once the cause of the gap is understood, then solutions can be identified. Performance improvement professionals also believe that if the cause can be from a number of interrelated sources, the solution will probably take a systems approach as well. Learning interventions are appropriate solutions for a lack of skill or knowledge, however, a learning intervention in isolation is seldom the answer. Even the best learning intervention requires organizational support before, during, and after the event. Broad and Newstrom (1992) describe many strategies for enhancing the transfer of learning back to the job and identify specific responsibilities for the trainee, trainer, and trainee's manager.

In addition, performance improvement practitioners acknowledge a system or process view of individual and organizational performance. They distinguish between workplace behavior and accomplishment, or the outcome of the behavior (Gilbert, 1978), and suggest that we do not just watch what people do on the job but study the result of what they do as well. Performance improvement professionals look at various levels of output: an individual performs a particular task which results in a task output, which leads to a job output (the result of several tasks), and finally to a process or function output (the results of multiple job outputs) (Rummler, 1987). They strive to improve organizational effectiveness by improving individual effectiveness. They take a strategic view, by aligning human resource development plans with human resources plans with overall business plans (Rothwell & Kazanas, 1994). According to Kaufman (1992), "Strategic thinking and strategic planning require more than good intentions. Mindsets, approaches, and systems must be aligned for the success of the organization and its members" (p. 107).

HRD practitioners are striving to become true business partners. To do this, they need a solid background in the theory and practice of human resource development, an understanding of business issues, along with a collaborative approach to consulting (Block, 1981). Collaboration involves joint problem-solving, whereby HRD practitioners apply their special skills to help managers solve problems. A collaborative approach is beneficial in that it provides for maximum use of people's resources - both the consultant's and the client's - and it spreads the responsibility for success, failure, and implementation.

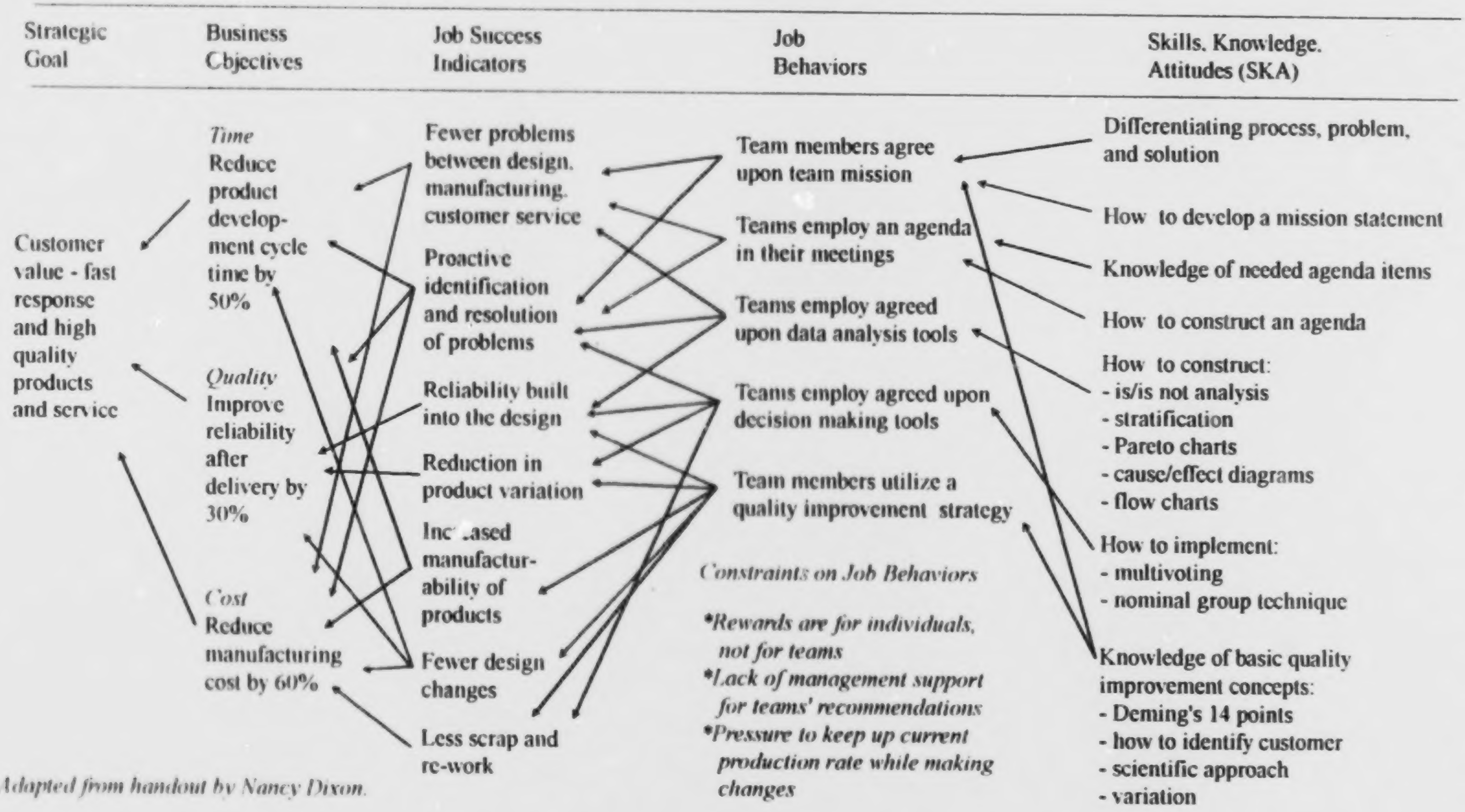
The impact map, developed and described by Brinkerhoff & Gill (1994), is a tool used in the diagnosis phase of performance improvement that creates a shared vision among stakeholders. It is a graphical representation of the alignment of learning interventions with strategic organizational goals, developed collaboratively by HRD professionals and clients. It illustrates, in a step-like fashion, the connections between the organization's strategic goals, business objectives, job success indicators, job behaviors, and the skills, knowledge and attitudes needed to perform the behaviors. (See Figure 1.) The visual depiction of the performance improvement process helps all of the stakeholders (trainees, supervisors, senior executives, HRD specialists) develop a common understanding of the role of learning interventions in improving business outcomes. The map provides the foundation for the design of the intervention and sets the criteria for evaluating the program at four levels: reaction and learning (after the program), behavior (job behaviors after the program), and results (job success indicators and business objectives) (Kirkpatrick, 1975).

Impact Mapping

The impact map is useful in analyzing performance needs and establishing clear and measurable learning goals that are linked to key business outcomes. While it is not the only tool to be used in the assessment phase, the impact map can be very powerful. Although stakeholders find the connections intuitively obvious, the process of creating the map and seeing chain of logic on paper often creates an "aha" experience.

The impact map is a versatile tool. Maps can be developed at the individual, process, or organization level of workplace performance. At the individual level, a specific job task can be mapped, such as an associate checking out customers in a retail store. The desired job behaviors as well as the indicators of successful completion of the task will be identified. Connections will be made from the success indicators up to business objectives and the organization's strategic goal. Working down from the job behaviors, the skills, knowledge, and attitudes required to perform

Figure 1. Impact Map
Developing Products with Self-Managed Cross Functional Teams
Problem-Solving Skills


Strategic Goal
Business Objectives
Job Success Indicators
Job Behaviors
Skills, Knowledge, Attitudes (SKA)
Customer value - fast response and high quality products and service
Time
Reduce product development cycle time by 50%
Quality
Improve reliability after delivery by 30%
Cost
Reduce manufacturing cost by 60%
Fewer problems between design, manufacturing, customer service
Proactive identification and resolution of problems
Reliability built into the design
Reduction in product variation
Increased manufacturability of products
Fewer design changes
Less scrap and re-work
Team members agree upon team mission
Teams employ an agenda in their meetings
Teams employ agreed upon data analysis tools
Teams employ agreed upon decision making tools
Team members utilize a quality improvement strategy
Constraints on Job Behaviors
•Rewards are for individuals, not for teams
•Lack of management support for teams' recommendations
•Pressure to keep up current production rate while making changes
Differentiating process, problem, and solution
How to develop a mission statement
Knowledge of needed agenda items
How to construct an agenda
How to construct:
- is/is not analysis
- stratification
- Pareto charts
- cause/effect diagrams
- flow charts
How to implement:
- multivoting
- nominal group technique
Knowledge of basic quality improvement concepts:
- Deming's 14 points
- how to identify customer
- scientific approach
- variation

Adapted from handout by Nancy Dixon.

those job behaviors can be identified.

Maps can also be developed at the process level. For example, a map on project management would outline the expected job behaviors and the relationships between the roles of project team members, team leaders, and team sponsors. The success indicators and links to business objectives would be identified as well as the required skills, knowledge, and attitudes for the various roles.

At the organizational level, the impact map serves as a form of a vision statement. At this level, the map would show general categories of skills, knowledge and attitudes that would be necessary to fulfill the vision. The job behavior category would be similar to describing the organizational culture required to fit the strategy and meet the goals. (See Figure 2.)

Whereas impact maps are usually created to display the *desired* state, a parallel version can be developed which represents the *actual* state in the job success indicators, job behaviors, and skills, knowledge, and attitude categories. This comparison will help identify the gaps between the current and the desired situation and help clarify the problem.

Perspective and flexibility are key elements when creating a map. It is important to keep in mind that the map is a tool to help analyze performance problems and show the connections between individual performer and organizational goals. It should contain as much information as is useful for this purpose and not become an end to itself. Depending on the scope of the situation and the business terminology, it may make sense to change the names of the categories, combine categories, or add a category, such as business strategy.

One element that can be added to the impact map that greatly increases its power is a section on organizational constraints to performing the job behaviors (Dixon, 1991). After the map has been created, this section answers the questions: If these people now have the required skills, knowledge and attitude (envision that they have successfully completed the learning intervention), what would hinder them from applying those skills on the job? What would be the barriers to them performing these desired behaviors back on the job? Completing this section in the analysis stage involves the stakeholders in trouble-shooting the issues that will likely affect the transfer of learning. This analysis uncovers concerns that often require solutions beyond the learning intervention, but issues that must be addressed. Identifying training as well as non-training needs reinforces the systems approach to the performance problem and educates the stakeholders about the role of the learning intervention in the big picture of improving organizational effectiveness.

Stakeholders who develop impact maps them find ways to use them. The logic is very powerful and the maps tend to sell themselves. Maps can be provided as a handout in the introduction to a training session to show the participants the connections to business objectives. Maps can lead to the development of other maps and learning interventions, such as a version for the managers or project leaders of the original target population which outlines the "supporting" job behaviors, success indicators, and skills, knowledge, and attitudes required of them for the original initiative to be effective. Maps can set the foundation for the development of an evaluation strategy. It is very encouraging to have the stakeholders "see" this and decide that they want to use the map as a framework for measuring results.

The map can be used in two directions. Going from the big picture down to the job behaviors needed to make that happen, it can be used as an assessment tool to uncover a lack of required skill and knowledge. It can also be used in the other direction as well, to evaluate current learning interventions for their connections to organizational goals. Once business objectives are identified, any HRD intervention can be plugged in and "mapped" to see if and how it is connected with business objectives.

Understanding the concept of the impact map can be very helpful for an HRD professional when confronted with a workplace performance problem. Performance problems surface in many ways: a changing business strategy, a lack of a certain behavior on the job, or a drop in a success indicator, such as customer satisfaction. The impact map helps the client and the HRD specialist better understand the problem. It provides the framework to display the actual and the desired, the known and the unknown, and the connection between individual and organizational performance.

The impact map is a powerful and versatile tool. Whether you are conducting a needs

Figure 2. Impact Map
Engineering Training & Education Process Logic

Strategic Goal	Business Objectives	Job Success Indicators	Job Behaviors
Continuously provide our customers with the highest quality product & service in the world. 1. Improve overall product quality 2. Reduce inventory 3. Reduce bureaucracy 4. Improve product development cycle	Provide the systems & component design, development, & technical support as requested of production & field service. Serve as central resource to assure technical preeminence in all major technology ares including engineering, materials, manufacturing, quality & computation systems. Fulfill the product development & technology needs of customers & support product & business components to meet company objective.	*Technical Excellence* Released designs meet expectations Logistics support & manufacturing capabilities are considered during product definition Analysis methods are matured & verified Rework, rededign, repetitive activities are the exception Products require NO special procedures to remain in operation Overall systems understanding is demonstrated Internal & external customers are satisfied *Business Planning* Technical requirements, design & manufacturing technology are in hand at the start of the design process Schedule & cost meetings are for future planning Programs are executed in a timely manner within budget No need for last minute heroic recoveries *Work Environment* Communication flows effectively in all directions Confidence & work enjoyment are shared values Work activities are recognized as processes Cross functional teams constitute our natural environment Employees are dedicated & encouraged to improve & standardize work processes Measurements support & encourage desired behavior Broadly accepted recognition & reward system Career planning is well developed	*Leadership* All in organization are constantly seeking process improvement Clear understanding of company goals across organization Efforts are focused on the business mission, not personal gain No empires are created Boundaryless thinking fosters teamwork Management is supportive & process oriented, not focused on output review Management is participative & leading, not reactive & autocratic *Teamwork* Good ideas are used regardless of the source Various department members work as a team to iterate on the best overall business solution Cross-functional teams empowered by their management are defining product requirements Organization works as a unified team to achieve objectives Team members communicate across functional lines Design engineers produce designs & analyses of them & obtain cross functional support Teamwork within & across organization *Communicating Process Needs* No barriers to communication & information sharing Everyone communicates well-internally to gain from each other's experience-externally to keep abreast of the new developments in the field Everyone knows their client's needs & ultimate goal & how those factors relate to their own work Listening to both internal & external customers Engineers have an understanding of the basis for the input they receive Clients & sources understand each other's needs, processes, results *Sharing Learning* Experts are identified & pass on/share their expertise Areas of needed training are identified & remedied Individuals are trained for their jobs & provided coaching and support needed to do them

assessment at the organization, process, or individual level, the impact map is a graphical way to frame the performance problem and show its relationship to organizational goals. When the map is developed collaboratively with the stakeholders, it creates a sense of shared ownership of the performance problem as well as the system of solutions needed to meet the business objectives. It helps the HRD professional become a true business partner.

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Strategic Quality Training: The Transformation of the Connecticut State Department of Labor

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Competitive organizations have made fundamental changes in business practice to improve productivity and customer service. To achieve these goals the Connecticut Department of Labor has designed a comprehensive training plan that integrates training and on-the-job performance to promote the agency's strategic mission. Utilization of the Strategic Quality Training model provides a long term strategy that (a) involves all stakeholders in the training process, (b) reinforces workplace application of training, and (c) evaluates the impact of training interventions.

To remain competitive in a global economy, organizations in the 1990's have made fundamental changes in business practice. Successful corporations have adopted new organizational strategies for production systems and new approaches for the management of technology (Dertouzos, Lester, & Solow, 1989). These organizations have focused on developing production systems to enable them to become low cost producers of high quality products and services while emphasizing quality customer service. To support the implementation of new production strategies these companies have redesigned work structures. Flat, flexible organizational designs have replaced the traditional hierarchies to encourage participative decision making which fosters the development of capable, committed workers (McLagan, 1989).

These corporate changes have provided the impetus for Human Resource Development (HRD) divisions to shift from reliance on a traditional organizational role emphasizing the design and delivery of classroom training to reliance on an expanded organizational role emphasizing the creation of learning systems within the organization (Dertouzos, Lester, & Solow, 1989). Competitive organizations rely on HRD professionals to provide employees with the knowledge, skills, and abilities necessary to sustain profitable, competitive organizations. Effective training strategies help employees develop their capacities to plan, to judge, to collaborate, and to analyze complex systems. Ensuring employees' capacities to flexibly handle a variety of job tasks, unpredictable work problems, and changing technologies will increasingly become the primary training goals.

Because continuous improvement of job performance will be a standard business requirement, there will also be an increased reliance on job rotations, career ladders, and training programs to reinforce learning (Senge, 1990). Successful companies will integrate thinking and learning at all organizational levels to ensure adaptability and generativity necessary to increase productivity (Senge, 1990). As a result, future training will incorporate more on-the-job training and retraining strategies to ensure learning over an employee's entire working life (Peters, 1988).

This shift in purpose presupposes an increased commitment to HRD activities. All HRD training strategies will be expected to promote an organization's strategic mission statement and corresponding goals. The HRD division benefits from this arrangement with greater visibility, greater leverage, and an enhanced strategic organizational role (Broad & Newstrom, 1992). In return, HRD divisions must justify the huge corporate investment in training. Successful training divisions will implement strategic plans to ensure the development of learning organizations to create, to acquire, and to transfer knowledge while modifying behavior to reflect new knowledge

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and insights. Increased accountability challenges HRD professionals to demonstrate state-of-the-art expertise as well as a thorough understanding of new technologies which support new job requirements. Finally, HRD staff must prove that the costly training investments produce improved job performance, increased productivity, and greater contributions to the organization.

To date, however, few corporations have integrated training and daily work activities. Corporate training strategies primarily focus on classroom skill development despite corporate demand for integrated training strategies. In particular, the absence of appropriate long term transfer of training strategies (to promote the utilization of the knowledge, skills, and behaviors learned during training to improve job performance; Baldwin and Ford, 1988) hampers HRD professionals' attempts to provide superior training packages. To promote transfer of training the Connecticut Department of Labor (DOL) began implementing a comprehensive training plan to ensure the integration of training and job performance in 1991. DOL's notable success (explained in the following section) suggests that long term transfer of training can be accomplished by combining core total quality management (TQM) principles with core transfer of training principles to ensure good business practice and customer satisfaction.

Reorganization and Training for Connecticut Department of Labor

Based on data gathered from a customer survey of Connecticut workers and Connecticut employers, the Department of Labor (DOL) began a major reorganization to ensure responsiveness to changing customer needs. Survey results suggested that Connecticut employers were dissatisfied with the service they received from DOL. Specifically, employers requested a greater range of services from a single DOL representative. These employers wanted customized service that met their changing, individual business needs with rapid turnaround times. In addition, individual customers were dissatisfied with the Employment and Unemployment services provided by DOL. Surveyed customers wanted to be served promptly, to interact with fewer employees to implement core services, to complete their registration for services in a single visit, and to obtain the right answers to their questions when first asked.

Reorganization to Meet Customer Needs. In response to customer requests a cross section of employees designed a new organizational structure to transform the agency into a customer-oriented, high performance organization committed to continuous improvement. To improve service delivery DOL replaced the hierarchical structure (14 layers of responsibility) with a flatter structure (6 layers of responsibility). To emphasize the change in business focus the agency's historic mission "*to protect and to promote the interests of the working men and women of Connecticut*" was expanded to include five goals related to the reorganization: (a) to improve customer service with one-stop shopping, (b) to reduce hand-offs (the number of times each client met with different employees), (c) to improve customer support services to meet the needs of internal customers, (d) to empower front-line workers to make decisions, and (e) to become a model employer/agency. Finally, the reorganization restructured the job responsibilities of all workers to advance the new organizational objectives. For example, the reorganization required workers previously responsible for providing either Unemployment Insurance services (e.g., processing unemployment insurance benefits) or Employment services (e.g., registering customers for work) to combine both client services in an integrated single interview session.

Support for the Reorganization. The agency's administration also made several commitments to DOL employees to encourage their support for the reorganization. First, there would be no layoffs as a result of the reorganization. In fact, employees were assigned new job responsibilities without a loss of pay even if their new positions were in a lower job classification. Second, a new job classification system was designed to promote upward mobility and to compensate employees for the demonstration of the ability to perform employment service job duties as well as unemployment insurance job duties. Third, DOL's management team modeled effective labor relations by engaging the union in a partnership to ensure a smooth transition. This partnership included the establishment of a Labor Management Committee to provide the union leadership with a voice in the reorganization. In addition a joint Management/Labor

Training Committee was created to make policy decisions about the agency's training initiatives. Finally, DOL management promoted a comprehensive cross training project to provide front-line employees with the job skills necessary to integrate Employment Services and Unemployment Insurance Services in a single interview with the customer.

Needs Assessment. To promote the goals of the agency's reorganization, the Staff Development unit conducted a needs assessment to identify the knowledge, skills, and abilities front line workers needed to perform the new integrated jobs. The needs assessment determined the gap between current skills of front-line staff and the skills that front-line staff would need after the reorganization was completed. In addition, the Staff Development unit used this information to develop a "pay for skills" cross-training program for 450 front-line workers incorporating training to standardize procedures and evaluations to test employees' abilities to perform the new jobs.

An eight person representative committee designed the needs assessment. Job incumbents served as representatives of the three different sized offices (small, medium, and large). Committee members were also chosen to balance Employment Service expertise, Unemployment Insurance expertise, and Employment and Training expertise. In addition, the committee included a Job Service manager and an Unemployment Insurance manager. Incumbents also were chosen to represent the union's perspective.

The committee (a) designed a Job and Task Analysis document as well as a Job and Task Analysis Worksheet, (b) piloted and revised the Job and Task Analysis Worksheet, (c) gathered data using the Job and Task Analysis Worksheet, (d) revised the Job and Task Analysis document based on the analysis of collected data, (e) presented the final Job and Task Analysis document to the Labor Management Committee and to staff in the Job Centers, and (f) used the Job and Task Analysis document to outline an overall three year training plan. To honor the agency's commitment to employee involvement, all 450 individuals impacted by the training process also participated in the needs assessment process.

The Three Phase Training Plan

The three phase training, which included formal evaluations to assess learning, was designed to teach front line staff how to integrate Employment Service tasks and Unemployment Insurance tasks in a single job interview. The training was designed to reduce customer hand-offs and to improve customer service by teaching training participants how to perform basic job tasks utilizing uniform procedures. The most critical, most frequently performed job tasks for the Community Service Representative I job were included in the Phase One training. The most critical, most frequently performed job tasks for the Community Service Representative II and Community Service Representative II will be taught in Phase Two and Phase Three training. To successfully complete each phase of the training participants had to successfully demonstrate their ability to use the training to complete short answer questions and job simulation exercises. In addition, all job tasks not included in the formal training plan would be learned on the job as front line workers performed their new jobs. The three phase training plan was explained to a group of senior managers and the Labor Management Committee before the development of Phase One training began. Staff Development Trainers convened focus groups of job incumbents to critique the curriculum and the corresponding evaluation methodologies. The needs assessment process and Phase One of the training were completed in one year.

Phase One Training. Phase One training included a Customer Service training module, an Employment Service training module, and an Unemployment Insurance training module. At the end of each training module participants learning was evaluated. Each module consisted of four days of training (two days of classroom training and two days of on-the-job training), a half day of study time, and a half day evaluation. The evaluations assessed learning by determining performance on job simulations.

Phase One training incorporated several distinct delivery techniques which were based on adult learning principles and participants' input about "the best way to learn" and "the best way to demonstrate" variables on the Job and Task Analysis document. The classroom training incorporated presentation and discussion, interactive video and discussion, role plays, demonstration, and simulations. For example, the Customer Service classroom training incorporated role plays and demonstration to teach participants how to improve face-to-face interactions and telephone interactions with DOL customers. The Job Service and Unemployment Insurance classroom training, on the other hand, combined presentation and discussion with a variety of simulations to teach the technical skills needed to perform the job.

The on-the-job training incorporated presentation and discussion, role plays, demonstration, simulations, and computer-based instruction. Access to computers allowed participants to practice the training learned in the classroom phase. Additionally, individuals with Employment Service expertise were paired with individuals with Unemployment Insurance expertise to coach each other during the practice sessions.

Team teaching was also an essential component of this training. Staff Development trainers were paired with supervisors to deliver the training and to administer the evaluations. The pairing of the trainers and the supervisors enhanced the skills of both groups. Supervisors learned presentation skills in a formal "Train the Trainer" session and practiced the new skills as they delivered the training. Staff Development trainers developed technical skill competency as they worked with supervisors to deliver the technical portions of the training.

Phase One training was designed to ensure the ability of front line workers to deliver integrated services. Upon the completion of this training the front line staff in the 18 Job Centers began to offer combined Employment and Unemployment services to their customers. Ongoing informal on-the-job training has reinforced and supplemented Phase One training. In addition, the evaluation of the workplace application of training skills two months after the training was used to refine future training plans. Data from customer service satisfaction surveys were also used to measure DOL's successes and to refine the future training plans.

Future Training For Connecticut Department of Labor

One-Stop Career Centers. The original goals for the reorganization of DOL have recently been expanded to meet the continually changing demands of the marketplace. To avoid the privatization of traditional core services, DOL has begun to collaborate with other state agencies to offer combined services to individuals and employers in Connecticut in 19 One-Stop Career Centers strategically located throughout the state. The delivery of integrated services in this new system requires a long term commitment to the development of all staff. Consequently, capacity building efforts will focus on improving skills to ensure (a) the delivery of universal services to all segments of Connecticut One-Stop Career Center workforce, (b) the delivery of specialized services responsive to local markets, (c) the integration of services in a statewide network, and (d) the measurement of quality outcomes to determine customer satisfaction. To accomplish this objective DOL and its business partners (other state agencies) must collaborate to design, deliver, and evaluate coordinated training for all One-Stop Career Center employees.

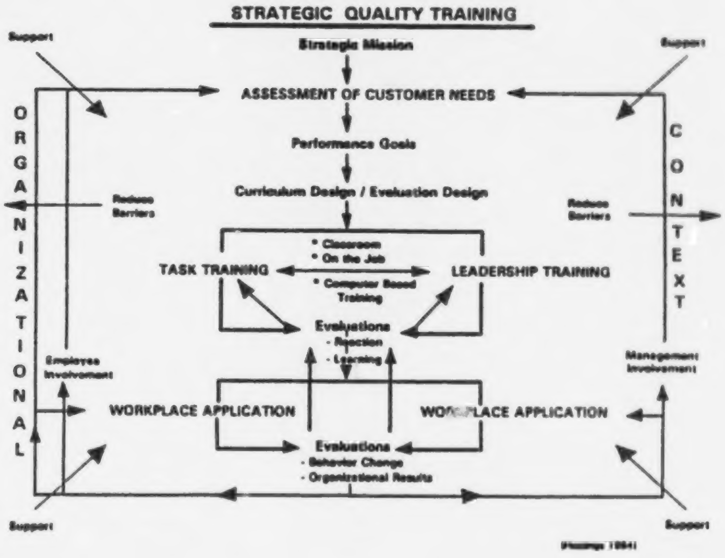
To successfully compete with private service providers (e.g., employment agencies), One-Stop Career Centers will build the capacity to provide superior service by capitalizing on current trends in business, technology, and training such as:

- Promoting lifelong, self-directed learning
- Promoting systematic learning which emphasizes measurable performance
- Combining centralized and decentralized training according to the needs of each One-Stop Career Center
- Using computer-based technologies to collect, retrieve, and disseminate information needed to provide integrated service

Training. The training process will emphasize the transfer of training from the classroom to the workplace. All training for the One-Stop Career Centers will be designed to: (a) provide instructional content that teaches the skills and knowledge employees need to do a job, (b) promote employees motivation to use the skills and knowledge learned in a training context, and (c) promote a work environment that supports the use of the newly acquired skills and knowledge. The training will be designed primarily as on-the-job training to ensure workplace application of new skills. Classroom training will be designed to augment the on-the-job training only as needed. The curriculum for the on-the-job training will incorporate demonstration, simulations, computer-based instruction, role plays, presentation and discussion, and peer coaching. The curriculum for the classroom training will incorporate presentation and discussion, interactive video and discussion, role plays, demonstrations, and simulations.

The training will be centrally coordinated and locally delivered. This design allows each One-Stop Career Center to design an individualized three year training plan that matches its specific training needs. All core modules, therefore, will be delivered each year to accommodate schedule variations. In addition, training consultants will team with One-Stop Career Center supervisors to deliver the training and to evaluate performance. Supervisors will learn presentation skills in a formal "Train the Trainer" session and will practice these skills as they deliver the training. Ultimately, the training consultants will be assigned to a specific One-Stop Career Center to help the Center solve specific workplace problems while the supervisors will provide most of the training required in their offices.

Strategic Quality Training Model. Over the past two years, DOL has developed a Strategic Quality Training model to support the continuous improvement of core business activities.


STRATEGIC QUALITY TRAINING
Support
Strategic Mission
Support
ASSESSMENT OF CUSTOMER NEEDS
ORGANIZATIONAL
Performance Goals
CONTEXT
Curriculum Design / Evaluation Design
Reduce Barriers
Reduce Barriers
• Classroom
• On the Job
• Computer Based Training
TASK TRAINING
LEADERSHIP TRAINING
Evaluations
- Reaction
- Learning
Employee Involvement
Management Involvement
WORKPLACE APPLICATION
WORKPLACE APPLICATION
Evaluations
- Behavior Change
- Organizational Results
Support
Support

This six step model will be used by the One-Stop Career Centers to develop all capacity building initiatives. First, a needs assessment is conducted to assess training needs related to the One-Stop Career Centers' mission. The gap between present skill level and the required skill level is identified and training objectives and corresponding performance goals are established for individuals and offices. In the second phase, training is designed to establish a formal link between training activities and the work environment. Specifically, *task training*, is designed to build specific skills (i.e., customer service skills) that are needed by the One-Stop Career Centers' staff and *leadership training* (i.e., coaching and mentoring training), is designed to build specific support skills needed by the supervisors and managers who are expected to promote the long term application of the task training. Once the curriculum is designed, corresponding evaluations are

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designed to measure reactions to the training, the learning that results from the training, the behavior change that occurs as a result of the training, and the organizational results that occur due to the training.

During the third phase, the training will be delivered and the evaluations to determine participants reactions to the training and participants' learning will be administered. These evaluations will be used to determine the short term transfer of training. Next, the application of both kinds of training takes place in the work environment. After training participants have had time to practice their new skills (a minimum of three months) evaluations to measure long term transfer (behavior change and organizational results) are administered. In the final phase modification of the training design and new training goals are defined based on the results of these evaluations. Continuous improvement is supported with a re-examination of the needs assessment process.

Summary. The utilization of this Strategic Quality Training model will facilitate learning for all employees while promoting the continuous transformation of the One-Stop Career Center itself. The reorganization of independent services of several state agencies into integrated services provided by One-Stop Career Centers, however, requires behavior change on the part of all employees. Therefore, the reorganization of services must be done carefully to minimize the resistance that always surfaces in reaction to organizational change. Based on research conducted during CT DOL's reorganization, the implementation of One-Stop Career Centers will face organizational barriers (e.g., weak sponsorship by senior managers), work group barriers (e.g., a "don't rock the boat " posture), and individual barriers (e.g., weak self-efficacy) that may limit the effectiveness of training interventions. Consequently, the training consultants must manage the resistance and remove the barriers to ensure the success of the One-Stop Career Centers. While specific barriers to the successful implementation of capacity building training cannot be defined in advance, this Capacity Building Training Plan outlines several forms of "good practice" that will minimize the impact of the barriers that will emerge. The use of the following strategies will allow training consultants to manage resistance as it emerges:

- Design training to support the One-Stop Career Center's mission
- Use an inter-agency committee (with representation of the stakeholders) to craft training plans
- Include participation of all stakeholders (the learners, the trainers, union and management) in the design and delivery of all training and evaluations
- Collaborate with faculty and graduate students at the University of Connecticut to ensure the use of "best practice" strategies
- Use training consultants (either existing staff or outside consultants) as managers/facilitators of the training process
- Combine classroom training and on-the-job training
- Use peer coaching and support in the training design
- Provide supervisory/management training for those supervising individuals engaged in task training
- Use supervisors to train and to evaluate performance
- Use evaluations immediately following the training as well as three to six months later to assess learning and job performance
- Develop systems to reward excellent outcomes and efforts
- Formalize an ongoing assessment process (Individual Development Plans) for trainees to ensure continuous learning
- Refine the long term training plan based on the changing needs of the One-Stop Career Centers

The use of the Strategic Quality Training model promotes training that (a) supports the organization's strategic mission, (b) responds to customer needs, (c) develops complementary skills of workers in all levels of the organization, (d) promotes continuous improvement in the workplace, and (e) provides a significant return of investment.

Implementation of this model will transform DOL and the One-Stop Career Centers by encouraging participation in the design, the implementation, and the application of relevant, contextual training that promotes lifelong learning. Employees will be empowered to use their distinct individual voices to respond swiftly to customer demands. In addition, work groups will be empowered with independent voices to solve problems and to transform the organization's products and services. Finally, collaborating work groups will be empowered with a collective voice that will continually transform the organization's mission and goals to ensure corporate survival in a global economy.

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Managing Organizational Learning to Improve Performance

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The scholarly and popular literatures on organizational learning fail to account for performance as the fundamental unit of measure in organizations. In the organizational context, learning must be managed for performance if it is to have value and find support. This paper synthesizes the findings of academic research and practitioner-oriented publications, and describes the implications of a performance-orientation for the four constituent components of organizational learning: knowledge acquisition, information distribution, interpretation, and organizational memory.

Organizational learning is receiving increased attention in both the scholarly and the practitioner literatures, it is recognized as "intellectually attractive and of practical importance" (Huber, 1991, p. 108). Organizational learning is not a new concept: Weber, as Cohen and Sproull (1991) point out, noted the ability of bureaucracies to learn from experience over 70 years ago, and Simon formally introduced the concept in 1953 (Simon 1953/1976). In more recent times, a sharp increase in the level of global competition, the drive for product and process quality and innovation, and changing expectations and skills levels of employees have led to the recognition that an organization's ability to learn is of strategic importance for gaining and maintaining a competitive position in today's market place. The importance of developing organizational learning has also been noted by the Human Resource Development (HRD) profession: Senge's (1990) *Fifth Discipline* is considered a classic in the field, and has spawned a host of articles and books on the *Learning Organization* (for example: Marquart & Reynolds, 1994; Swieringa & Wierdsma, 1992; Walker, 1993; and Watkins & Marsick, 1993). Marsick and Watkins (1994) propose that the learning organization become the integrative vision for HRD. Organization scholars have adopted the concept of organizational learning as useful for advancing the theoretical knowledge base of organizational actors and actions. A better understanding of the processes of organizational learning, as Cohen and Sproull (1991) in the introduction to a special issue of *Organization Science* dedicated to the topic assert, will "provide a positive alternative to rational choice assumptions [and may account] for phenomena such as culture and institutionalization" (p. i). Further, organizational learning theories will "more gracefully accommodate the effects of history and timing on organizational events and on the beliefs of organizational actors [by] providing insight into how a sequential stream of experience becomes the basis for action" (Cohen and Sproull, 1991, p. i).

Organizational Learning: Metatheory or Strategic Intervention?

As a concept that addresses one of the fundamental properties of open social systems, organizational learning is complex, ambiguous, and fraught with methodological and conceptual challenges. A review of the practitioner and scholarly literatures reveals a broad spectrum of issues, definitions, and concerns united under the concept. The various approaches can be represented as a continuum ranging from organizational learning as a metatheory for organizational behavior on one end to organizational learning as a deliberate strategic intervention on the other. Figure 1 identifies the two extremes of the continuum:

Figure 1
Continuum of Definitions of Organizational Learning

Organizational Learning as Metatheory ———————————————— Organizational Learning as Strategic Intervention

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Organizational Learning as Metatheory Like organizational metaphors (Morgan, 1986), metatheories are conceptual frameworks of a fundamental nature that guide and direct the researcher's or practitioner's approach to a given problem. Since the perception of reality, of a given situation, problem, or issue, is mediated by our cognition, selecting a metatheory or conceptual framework is of fundamental importance; it is "perhaps the most strategic choice that an investigator makes, for it significantly influences the research questions that are asked, the concepts and constructs that are developed, and the kind of propositions and hypotheses that are set forth to answer the research question" (Van de Ven, 1994, p. 9). Since Cyert and March's (1963) early definition of the concept of organizational learning—and with increasing frequency in the past ten years—it has received attention as a theoretical framework for advancing organization theory and describing and explaining organizational behavior. Theories of organizational learning are useful because they "offer a positive alternative to rational choice models and they complement the organizational ecology perspective, institutional theory, and the microsociology of knowledge" (Barnett, 1994, p. 3). Organizational learning designates "a family of descriptive, explanatory, and normative models of change in collective behavior" (Barnett, 1994, p. 5). It is seen as a fundamental mechanism by which organizations as open systems interact with their environment, process information, and adapt to changing external and internal conditions. Central to the concept is 1) the process of learning from past experience, 2) learning involving the acquisition of knowledge, 3) organizational change, 4) a focus on the identification and correction or prevention of problems, and 5) the organization as the unit of analysis. Despite disagreement over terms, assumptions, and research methods, there is, as Barnett (1994) concludes, a fair amount of consensus among scholars over the definition of the construct. Reviewing the major research on the subject over the past 25 years, Barnett (1994) advances the following as a composite of definitions common to most scholarly works on the topic:

> Organizational learning is an experience-based process through which knowledge about action-outcome relationships develops, is encoded in routines, is embedded in organizational memory, and changes collective behavior. (Barnett, 1994, p. 9)

A central aspect of the scholarly work on organizational learning is the emphasis on theory development, rather than application or improvement. The two perspectives, explanatory/descriptive and normative/intervention-oriented, are seen as conflicting, and potentially contradictory and mutually exclusive. As Argyris and Schon (1978) assert, "theories created to understand and predict may be quite different from theories to help people make things come about" (p. iv). There is the perception of danger of a premature narrowing of the field through an overly applied, improvement-oriented focus, while a broader, descriptive conceptualization may afford greater opportunities for comprehensive and inclusive theory building. Issues of power, politics, and morality, or the consequences of organizational learning for particular groups within an organization, are seen as confounding the phenomenon and distorting our understanding of the construct (Barnett, 1994).

Organizational Learning as Strategic Intervention On the opposite end of the continuum is the application and intervention-focused understanding of organizational learning. Senge (1990) introduced the concept of the *learning organization* as an answer to changing economic, social, and technical conditions, asserting that "the organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn at *all* levels in an organization" (p.4). The learning organization, according to Senge, offers an alternative to the traditional authoritarian model, an answer to a shift in people's orientation to work from an instrumental to a higher, more sacred view oriented toward intrinsic rewards. A host of publications have since further explored and advocated the learning organization. Common to many of them is the prescriptive, applied focus geared towards executives, managers, HRD specialists, and consultants. *Becoming a learning organization* is advocated as a strategic decision by organizations in reaction to the increasing speed of technological, economical, and social change. Organizations must not only learn at increasing rates, but also *learn how to learn;* they must become capable of developing the capacity for examining and changing immediate, routine tasks—single loop learning—and underlying governing values, policies, and assumptions —double loop learning (Argyris and Schon, 1974). The prescriptions for becoming a learning organization are many: Learning organizations are said to require continuously developing strategies, organically networked structures, a task-oriented culture, and supportive systems (Swieringa & Wierdsma, 1992); they must embrace systems thinking, develop anticipatory and loop learning capabilities, apply action learning, develop information systems, and create learning spaces (Marquart & Reynolds, 1994); they focus on individual, team, and organization-wide levels, and require work redesign, empowerment of employees, and enlightened leadership (Watkins & Marsick, 1993).

The Missing Link: Managing Organizational Learning to Improve Performance

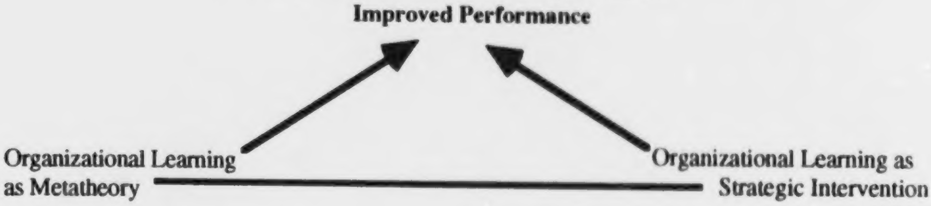
Both stances, metatheory and strategic intervention, are incomplete. The scholary view neglects the improvement potential of organizational learning, while the practitioner focus tends to portray learning as a binary event. Learning in open systems is a continuous, omnipresent, and fluid process of information exchange with the environment, which cannot be turned on or off at will. Organizations have little control over *whether or not* learning takes place, but they do have potentially substantial amounts of control over *the kind* of learning that occurs within their bounds. To be of value to organizations, organizational learning must be managed for performance improvement, and HRD is the natural function to direct learning for performance. The orientation toward performance improvement is the missing link in the bewildering "diversity of opinions and conceptualizations" (Walker, 1993, p. 5) of both the academic, conceptually-oriented and the practitioner, intervention-focused literatures. The primary purpose, goal, and objective of organizations, private or public, is to produce and deliver high quality goods and services that meet or exceed customer expectations, not to increase learning, acquire knowledge, or become a learning organization. Performance is the fundamental unit of measure in business and industry, whether public, private, for-profit or not-for-profit, and the concept of organizational learning will find sustained support in organizations to the degree that it results in improved organizational performance and excellence. The importance of performance improvement has been recognized by scholars such as Rummler and Brache, (1990); Swanson, (1994); and Jacobs, (1989); but also by government. A recent report by the U.S. Department of Labor (1992), for example, identified the need for high performance in government in light of the increasing federal deficit and budget cuts ('doing more with less'); the lack of confidence in and level of dissatisfaction with government services; and finally the need to attract and retain a high quality, motivated public work force. The report defines high performance in government as "a comprehensive, customer-driven system that aligns all of the activities in an organization with the common focus on customer satisfaction through continuous improvement in the quality of goods and services" (p. 2).

Organizational learning must be managed for performance at the individual, group, process, and organizational level; learning is omnipresent, yet it must be aimed at improving performance and increasing expertise. A focus on organizational learning is a means to an end, it must be supportive of organizational outcomes, and is not an end in itself. Focusing on organizational learning, in the business context, constitutes an investment, and there are transaction costs in terms of time, direct and indirect expenses, and opportunity costs. March's (1991) seminal article on exploration and exploitation in organizational learning addresses this central task of organizations to find the right balance between the pursuit of new, uncertain, but potentially profitable possibilities—exploration—and the *harvesting* of known activities —exploitation. Learning is inherently risky, and success is not always assured. Like other investments, the value of a focus on organizational learning will be assessed by organizational decision makers along the three performance questions identified by Swanson (1994):

1) Will individuals perform better on the job as a result of a focus on organizational learning?
2) Will the process perform better as a result of a focus on organizational learning?
3) Will the organization perform better as a result of a focus on organizational learning?

Figure 2 represents the connection between organizational learning and performance:

Figure 2
Organizational Learning and Performance


Improved Performance
Organizational Learning as Metatheory
Organizational Learning as Strategic Intervention

The link between organizational learning and organizational outcomes has, of course, been recognized in the literature: Argyris and Schon (1978) for instance argue that organizational effectiveness must be enhanced in order to claim that organizational learning has occurred; Huber (1991) declares that knowledge must be—at least potentially—useful to the organization; Nonaka (1994) addresses the process of evaluating the truthfulness of organizationally created knowledge by standards of cost, profit margin, and contribution to the firm's development; and Barnett (1994) recommends concentrating on "learning as a process of change, (*sic*) that allows for an opportunity to ask whether learning is intelligent" (p. 20).

Since learning is a means, not a primary organizational outcome, it is important to distinguish between learning that improves performance and learning that does not. Learning does not always lead to intelligent behavior: there are many examples of spurious or superstitious learning, competency traps, and erroneous inferences. If learning is managed for performance, it will result in desired organizational outcomes, if not, its benefits to the organization are doubtful at best. Furthermore, organizational learning is not the only means for improving performance; other interventions such as organization development, task design, motivation, or technological work place solutions also have the potential for increasing the attainment of desired organizational outcomes. In order to use it strategically and maximize performance, it is important to understand under what conditions and how learning, rather than another type of intervention, will lead to the desired outcome. The relationship between the learning and performance is depicted in form of a decision matrix (Figure 3):

Figure 3
Decision Matrix for Performance-Oriented Organizational Learning

		Focus on Organizational Learning Appropriate?	
		Yes	No
Learning Managed for Performance?	Yes		
	No		

Organizational learning strategies, then, must be used discriminately, they are not panaceas for all organizational ills. Organizational learning must be managed to increase performance. When linked to performance, learning is intentional, and—like structured on-the-job training (Jacobs, 1990)—systematic (Systems Theory used), its outcomes are defined in advance, and it is seen as a solution within the human performance system. Learning not managed for performance, on the other hand, is unintentional and suffers many of the same flaws as unstructured training: it produces unpredictable results, is non-systematic, and does not produce reliable solutions. The challenge for organizations is to manage organizational learning, to increase the level of intentional—that is performance oriented—learning, while decreasing the amount of unintentional, unreliable learning.

Managing Organizational Learning Processes to Improve Performance

The remainder of this paper will examine four major learning processes and describe the implications of performance oriented learning management for each. The four learning-related constructs and processes commonly found in the literature are described by Huber (1990) as

- Knowledge acquisition
- Information distribution
- Information interpretation
- Organizational memory (p. 90)

Knowledge Acquisition Knowledge, whether in the domain of skills, information, or attitudes (Campbell, 1984), is gotten by organizations in a number of ways: through congential learning, experiential learning, vicarious learning, grafting, and searching and noticing (Huber, 1991). *Congential knowledge* consists of the stock of experience, attitudes, know-how, and skills that founders bring to a newly created organization. "The nature of an organization is greatly influenced by the nature of its founders and its founding [....] What an organization knows at its birth will determine what it searches for, what it experiences, and how it interprets what it encounters" (Huber, 1991, p. 91). *Experiential learning*—learning from experience—has received copious attention in the organizational learning literature as one of the major theoretical constructs. Experiential learning includes experimentation and testing of alternative courses of action; internal and external feedback, self-appraisal, and self-reflection, such as action research; experimental organizational forms, such as self-designing organizations; unintentional or unsystematic learning, such as members' self-education or professional development; and learning from trial-and-error performances. *Vicarious learning* —learning from the experience of others or second-hand learning—is accomplished through benchmarking other companies, through consultants, trade or professional meetings or publications, customers and suppliers, and professional networks. *Grafting* consists of increasing the organization's knowledge base through new members, acquisition of new technologies or processes, or mergers with other organizational units or entire companies. Finally, organizations expand their knowledge through performance monitoring, environmental scanning, and focused searches for solutions to existing or anticipated problems.

Knowledge acquisition is costly, and critical and scarce resources will be wasted unless it is managed for performance improvement. Managing knowledge acquisition for improvement requires the organization to declare its performance objectives at the individual, process, and organizational level, and to direct learning towards those objectives. Unfettered learning is not likely to lead to improved performance. There must be standards for what constitutes useful knowledge, and learning must be evaluated against these standards by top or middle management (Nonaka, 1994). Learning requires a certain amount of slack resources for experimentation and exploration. Over-management of learning, on the other hand, can lead to a lack of variation and available alternatives, and there is a danger of stifling creativity and the development of alternative courses of action through overly tight restrictions. 3M's "15 percent rule" is an example of a learning strategy linked to performance: Certain units within 3M are free to spend up to 15% of their working time on projects not related to current production tasks, but the corporate goal is that 30 percent of annual sales result from products developed within the previous four years (W. Coyne, personal communication, December 2, 1994). When new knowledge is created, it is not always beneficial to the long-term survival of the firm, even if there is short-term success. While success tends to lead to an increase in like actions, a balancing cycle often leads to 'competency traps' as was the case in the Swiss watch industry when digital technology conquered the market.

Figure 4 shows some key attributes of knowledge acquisition managed for performance:

Figure 4
Knowledge Aquisition and Performance Orientation

		Knowledge Aquisition
Managed for Performance?	Yes	**Linked to Strategy** **Evaluated** **Intentional** **'Calculated risk'**
	No	**Haphazard** **Unintentional** **Wasteful** **Competency Trap**

Information Distribution The distribution of information, the second constituent process of organizational learning, links individuals with groups and the organization as a whole. Once useful and valid information is created, it must be distributed to other organizational members. Without distributive processes, the organization as a whole knows literally less than its members. Organizations, as Huber (1991) asserts, oftentimes do not know what they know. Large organizations especially have "only weak systems for finding where a certain item of information is known to the organization" (p. 100), and are often not aware for whom certain information may be useful and under what conditions. As in knowledge creation, organizations need to strike a balance between inundating members with information—thereby diminishing the value of information—and restricting access—at the risk of excluding members from vital information. The criteria for information distribution are again oriented toward their impact on performance. Not all useful knowledge leads to immediate action or behavior changes; information that increases the potential or capacity for desired behavior is equally useful and should be shared. Figure 5 depicts a sample of characteristics of information distribution managed for performance:

Figure 5
Information Distribution and Performance Orientation

		Information Distribution
Managed for Performance?	Yes	**Information distribution linked to strategy** **Information evaluated** **Users identified** **Information needs identified** **Information indexed** **Effective distribution channels used**
	No	**Information distributed indiscriminately and haphazardly**

Information Interpretation Interpretation is the process by which information is given meaning and by which shared understanding of events is developed. (Huber, 1991). Organizations rely on interpretation by individuals for distribution, sharing, and creating knowledge. Interpretation, however, can vary among individuals, and this variance can result in variations in the understanding of the message or information content. The extent to which shared understanding of new information results from interpretation is affected by

(1) the uniformity of prior *cognitive maps* possessed by the organizational units;
(2) the uniformity of the *framing* of the information as it is communicated;
(3) the *richness of the media* used to convey the information;
(4) the *information load* on the interpreting units; and
(5) the amount of *unlearning* that might be necessary before the new interpretation could be generated. (Huber, 1991, p. 102)

Since collective action and behavior depends on the veracity of the interpretation by employees, this process is critical for organizational learning. Issues of communication styles, trust, respect, openness, and honesty appear to be related to this issue, as is the cohesiveness of the prevailing culture. While some variance in interpretation is desired—it results in increased variation in behavior—organizations must maintain a minimum of shared understanding to function effectively. Some attributes of information interpretation managed for performance are listed in Figure 6:

Figure 6
Information Interpretation and Performance

		Information Interpretation
Managed for Performance?	**Yes**	**Likelihood of interpretation variance recognized** **Balance between variation and uniformity** **Cohesive culture, trust, respect, and openness** **Strong, unambiguous message content** **"Rich media" used** **Feedback and verification of correct interpretation** **Information channels not overloaded** **Sensitivity to unlearning issues**
	No	**Excessive variation** **Stifling uniformity** **"Rumor Mill"**

Organizational Memory An organization's capacity to learn depends on its ability to store and retrieve information timely and accurately. The three previously described processes: knowledge acquisition, information distribution, and information interpretation all directly depend on the organization's ability to access previous information and 'to know what it knows'. Information and knowledge are stored at various levels: as norms and codes of behavior; in organizational routines and scripts, such as stories, histories, and myths; as culture and organizational structures; in procedures and explicit and implicit rules; and, of course, in individuals' memories and computer data banks. Poor organizational memory results from: personnel turnover; discarding of information because its future usefulness is not recognized or not anticipated; poor or inefficient storage; and the lack of proper indexing (i.e. knowledge of the whereabouts or the existence of information.) While a lot of 'hard' information is regularly stored in organizations, non-routine information or process knowledge is less often saved reliably. Huber (1991) points to recent developments in computer science and predicts an increase in the use of computer-based expert systems for accurate and reliable storage of 'soft' and non-routine information. Organizations that manage learning for performance recognize the strategic importance of organizational memory in all its forms: through rules and procedures, training, and even culture. Such organizations will manage the organizational memory in terms of knowledge that is useful or potentially useful, and knowledge that must be discarded or unlearned. Organizational memory is the key to successful learning, and only those organizations that manage it well reap the benefit of learning on the individual, process, and organizational level.

Figure 7 suggests some key points in organizational memory managed for performance:

Figure 7
Organizational Memory and Performance

Managed for Performance?		Organizational Memory
	Yes	**Continuity of key personnel** **Training used systematically** **Information Technology** **Organizational networks** **Free information flow** **Trust, openness, lack of 'impression management'** **Periodic and systematic review of knowledge base** **Longterm orientation** **Systematic retention and indexing of useful knowledge**
	No	**Haphazard, unsystematic storage of knowledge** **"Doomed to repeat mistakes of the past"**

Conclusion

Organizational learning is a powerful concept that has the potential for enriching theory and practice of organizations and is of key importance to HRD. The concept cuts across organizational functions and levels, and ranges from deliberate, cognitive processes to issues of norms, culture, and theories-in-use. The concept has the potential to unify many disparate aspects of organizational functioning and act as strategic lever for improvement. Organizational learning has received much attention in the academic community, and more recently under the concept of the learning organization among practitioners. The two perspectives have not been integrated well: scholarly research of the field is careful to avoid an overly prescriptive, intervention-oriented approach for fear of narrowing the field of inquiry prematurely. Practitioner-oriented publications fail to adequately take into account that not all learning is desirable, and advocate the learning organizations as a panacea for a large number of organizational ills. Neither perspective can afford to ignore the other: academic research atrophies and renders itself irrelevant outside of academia without accounting for the needs of real-world organizations. Intervention-oriented theories about the learning organization, on the other hand, run the risk of becoming overly mechanistic, trivial, and intellectually uninteresting without taking the dynamic, complex, and oftentimes unpredictable nature of organizations as open social systems into account. Both perspectives lack the performance orientation that can serve as the common linkage between the two. Managing learning for performance recognizes the goal-oriented perspective of the learning organization, but uses the process knowledge gained from academic research to guide the use of learning. The four key processes: acquiring knowledge, distributing and interpreting information, and storing knowledge in organizational memory have to be managed for performance if they are to lead to desired organizational outcomes and further the goals of the organization and its members.

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The Effectiveness of an Electronic Performance Support Systems on Learning and Performance.

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This research is measuring the effectiveness of Electronic Performance Support Systems (EPSS). Some of the major advantages of EPSS, like increasement of productivity and better learning outcomes are evaluated with insurance agents working on laptops. Theoretical statements, research framework and hypothesis are presented. The conclusions are drawn and no significant improvement on productivity or learner results has been seen.

In the last ten years the Computer Based Training (CBT) market grew tremendously and the quality of the programs increased. Sound and vision were added, educational technology improved the design and structure. Nowadays key words are just-in time learning and learning by doing. For that CBT had to be revised and integrated in the workplace. One way to integrate learning in the workplace is using Electronic Performance Support Systems (EPSS). EPSS supports and monitors employees while they are working; but EPSS is not only an alternative for the human master in the master/journeyman paradigm, it is more. EPSS is an integration of all the electronical sources and tools employees need to do their job. Developers and researchers working in the field of EPSS have high expectations. EPSS will improve productivity and learning outcomes. What are their assumptions? A short historical overview of corporate training can help.

Since the early seventies most of the employees in business and industry are trained by classroom instruction. They are treated as a homogeneous group. The master who's the expert teaches the desired knowledge and skills. The problems of classroom instruction are related to costs and benefits. There is a lot of money involved; turnover costs etc. The benefits of classroom instruction are relatively low. Employees have to learn skills in a theoretical way . Learners have problems to relate the classroom instruction to their own specific situation. Reasons to change the paradigm to the good old master/journeyman paradigm. Since the middle ages this paradigm has been proven. At the workplace a master is doing his job. The journeyman observes the master and tries to imitate the him. A cheap and efficient way. Nowadays it is hard to use this paradigm because of the number of employees. But there are some good properties in this training on the job. Related to classroom instruction training on the job is often cheap. Employees don't have to leave their workplace anymore (Jacobs & Mc Griffin, 1987, Jacobs, 1990). The learning processes are more concrete and active (Münch, 1990). The transfer is higher because of the identical situation between the learning environment and the workplace (Wexley & Latham, 1991). All these advantages stay when CBT is used in the workplace. Besides that people can get trained whenever and where they want. But CBT has problems too. Employees have to stop working when they use CBT. Training with CBT is still an separate event (Gery 1989). Employees will benefit from the integration of learning with their job. EPSS is possibly the solution for all the problems stated above. This research will try to explore some conclusions.

EPSS is a concept which integrates the electronical sources employees need to do their job. Employees need tools to perform, they have to look up information quick to use in their job, they want to learn certain subject-matters or skills when needed and they want to get expert advise to guide them through difficult parts of their job. For that reason an EPSS environment exists of four components (fig 1).

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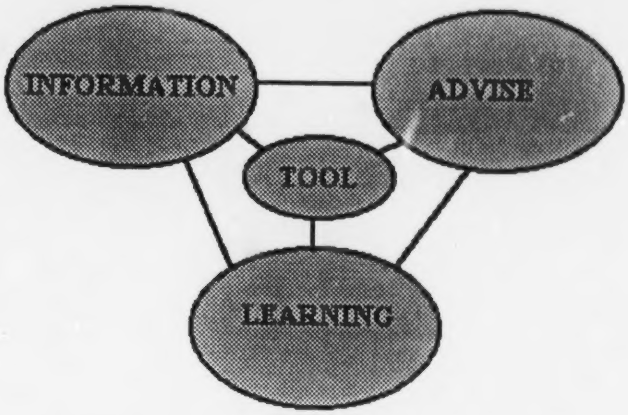
Figure 1. The components of an EPSS.



EPSS provides employees with just-in time knowledge, information and learning at the right moment (Gery 1992). High transfer, no need to leave the workplace and more active learning processes are advantages of training on the job. Specific EPSS advantages are immediate access to information and learning, a reduction of the amount of formal training in advance of task performance and a reduction of the supervisor time spend on employees. It has the additional advantage that the responsibility focus changes from the trainer and training program to individual job specific learning experiences (Gery, 1992). Performance support systems can be important in employees self management or self-directed teams (Bramer & Senbatta, 1993) and will improve the workers productivity (Raybould, 1990, 1991). Law (1994) tries to find scientific evidence for the surplus value of EPSS from current cognitive theory. He relates performance limitations to cognitive explanations. Performance requiring large amounts of factual knowledge, proficiency of skills infrequently utilized on the job or simultaneous processing of a large amount of information have an cognitive explanation. It places high demands on long term memory without adequate processing, declarative and procedural knowledge that decayed or in a limited capacity of the working memory. In Law's opinion EPSS can provide an extension of long term memory and reducing the working memory load.

Problem Statement

In the first paragraph a lot has been stated but little has been proven. This research project attempts to evaluate an EPSS on the effectiveness. In literature a few disadvantages were found. Just-in time training at the workplace, providing employees small task-oriented training granules and employees taking control of their own learning process will create problems. Clark (1992) gathered some subjects we have to take into account. In her opinion employees may fail to build a unified picture of their job when they have to distract information from an EPSS. Several little information parts will create a fragmented knowledge base. Especially novices need a high level overview of the content to relate details of training. She doubts about the learner control in EPSS. She cites research of Milheim and Martin (1991) which proves that learner control is not as effective as instructional control. It is expected that the introduction and implementation of EPSS will summon resistance. Employees are not likely to give up working 'the old way'. And when not, there is an other problem. The pressure in their work. Employees will not have the time to engage the training support. A more philosophical question is related to the long term effects of

EPSS. Will it 'de-skill' workers? Will it 'de-motivate' workers? Or will it automate the low level tasks and bring in more time to perform tasks on higher level (Carr, 1992)?
It is not possible to give answers on to all the questions. In general we want to measure the effectiveness of EPSS. We expect EPSS to be more effective than the "old situation". "Effectiveness" is split up in effectiveness on learning (learner results) and effectiveness on working (productivity). The next section will explain the setting and will further state our underlying expectations.

Research questions

The project is executed in cooperation with a large Dutch insurance company. This company is selling insurance products to their clients by a widespread network of insurance agents. These agents are working for the company on a commission based system. The company administrates the sold products and provides background information and training to their agents. The insurance agents operate from their home office by visiting (potential) clients. The training program exists of an introduction course for new agents and specialized (related to specific products) courses for advanced agents. In general training means classroom instruction, experts provide knowledge, manuals and textbooks to read at home. The training department ascertained this way of training not to be (cost)effective. The expensive courses didn't lead to better outcomes in learner results and productivity. As the policy for the future was to develop a computer tool to communicate better and quicker with their head-office (sending, receiving data), the training department joined a project which provides all their agents with laptop computers in the near future. The idea was born to develop an EPSS for insurance-agents. The EPSS was developed and exists of information, advise and learning about their products. The agent can read information about a product and can automatically calculate with their clients data. The EPSS will give an advise based on the specific situation of the client. The agents support their sales presentation with slides and pictures. They also get Computer Based Training (CBT). The casebased modules enclose all their products. A self test indicates the preparedness of knowledge and skills related to the products. The company expects such an electronically environment to be more effective. To test the expectations three main groups were compared. The first main group is the group working and learning in a traditional way. This group gets a traditional classroom instruction and they work pen/paper based (forms, hand-books) and get information from manuals. The second main group is working and learning with an EPSS. The third group is a control group. For several reasons it was not possible to do preliminary research. So we compare the two treatments (traditional and EPSS) with a 0-group. This third main group didn't have any training and is working on a traditional way. In order to judge about learning and working we split up the treatments in two parts; the first is the working part. It's the tool program in the electronical environment and the forms and hand-books in the traditional way. The second is the learning part; the CBT in the electronical environment and the classroom instruction in the traditional group. To make the description of this research more complex we had to deal with other variants. In table one the groups are stated.

Table 1; Three main groups and their variants.

TREATMENT		n
1	TOOL & CBT (EPSS)	12
2A	TOOL & CLASS	8
2B	PAPER & CLASS	4
3A	TOOL	5
3B	PAPER	7

The main hypothesis "EPSS is more effective than traditional classroom training and traditional pen/paper based working". This thesis is split up in several research questions. The question related to training is; Agents in the EPSS group, trained with CBT, will score higher on a learners test. In other words these agents will have higher learner outcomes. The research question related to working is; agents working with EPSS will score higher on selling. The productivity will increase. As this EPSS is a new system, we are also interested in the evaluation of the components involved, the feedback, the support and the opinion of the users. Answers and questions on these components are important for future development. In this paper we will only try to answer the questions above. Although the next section "methodology" will give an overview of the whole project, we will not go further into the quality of the developed EPSS. At the end we will try to show causes for the outcomes.

Methodology

The data collection in this project is split up in a qualitative- and a quantitative part. Table two shows the method used to gather the information, the target group, the treatment and the amount of persons involved.

At the start of the project we collected the sales results of 1993. To give an opinion about the productivity we used their sales of insurance's in the field of annuity. These insurance's are topics in the CBT and classroom training. At the end of the project their results over 1994 were collected. It was expected that agents using an EPSS would sell more annuities compared with agents not using an EPSS. The next measurements were the interviews (n= 12). Four people of every group were interviewed. They answered on structured questions related to our variables (see next chapter). At the end of the interview they got a case. They had to respond to a practical situation and had to process the data. This practical situation was observed to give insights in people using their computer or manuals and forms. This was done to relate performance differences to productivity and learning results. These learner results were measured on all the agents (n= 36) in a test. They all got the same test on pension insurance's. Next all the agents got a questionnaire (n=36). The questionnaire was separated in two different parts. The first was a general part based on our variables, the second was related to the specific treatment. After they filled up the questionnaire the whole group held a discussion (n= 36). This session was important to collect the ideas of the agents. They have to work all day with EPSS. They know what is effective and what they like. So gathering their experiences is worthwhile. To compare the assertions of the agents we talked to their managers (n=8). What is their opinion about EPSS, productivity and change? They discussed positions related to EPSS. In the section results and conclusions our findings are forwarded.

Table 2. overview of the methodology.

O1	XA	OA1	O3	O4	OA2	O5	O6	O7	O8
O1	XB	OB1	O3	O4	OB2	O5	O6	O7	O8
O1	XC	OC1	O3	O4	OC2	O5	O6	O7	O8
O1	XD	OD1	O3	O4	OD2	O5	O6	O7	O8

O1	Sales results '93, agents (n=36)
Oa1..d1	Inteview , agents (n=12)
O3	Observation, agents (12)
O4	Learning test, agents (n=36)
Oa2..d2	Questionnaire, agents (n=36)
O6	Discussion, agents (n=36)
O7	Questionnaire, managers (n=8)
O8	Sales results '94, agents (n=36)

XA	TOOL&CBT	(n= 12)
XB	TOOL&CLASS	(n= 8)
XC	PAPER&TOOL	(n= 5)
XD	PAPER	(n= 7)

The theoretical construct behind EPSS

A lot has been written about EPSS, less has been proved. From literature a theoretical framework has been constructed. The framework encloses the variables who exert an influence on the EPSS. Work, learning, treatment and background have their effect. In table three we state our variables. Work, learning and background are general. The treatments TOOL, CBT CLASS and PAPER are specific.

Table 3. the framework with an influence on EPSS.

Constructs	Variables
Work	
quality	service, communication, adequate advise, sales talk
productivity	sales results
___attitude towards work	satisfaction, self-confidence
___performance	independency, commercial, daily work
Learning	
way of learning	processing, guidance, study conceptions
Tool	
communication.	interface, support
advising client	advise
obtaining information	time to learn, applicable, studiousness

CBT	
communication	interface
pedagogical/didactic dimensions	structure, experience validity, feedback cooperative learning
general	usability, integration with TOOL
Class	
training and support	training, support
___pedagogical/didactic dimensions	structure, experience validity, feedback cooperative learning
___effects	effects
Paper	
presentation	presentation, support
advise	advise, help
___obtaining information	time to learn, applicable, sources
Background	
personal data	age, sex
experience	educational background, working and computer experience
attitude towards innovation	working with new technology

Results

When an opinion is given about EPSS we combine TOOL and CBT. Traditional working and learning is PAPER and CLASS. To be able to use the data the independence of the groups had to be sure. First this independence had to be tested on age, working experience, educational background and innovation willingness. On age and working experience no significant difference was found (one-way analysis of variances for age, n= 36, p=.45 one tailed and for working experience n= 36, p=.27 one tailed). Also for educational background no significant difference was found. But on innovation willingness the score of the TOOL-group was significantly higher regarding the CLASS group (Mann-Whitney Test, n=9, p=.016 one tailed) and the PAPER group (Mann-Whitney Test, n=12, p=.037 one tailed). A reason for this result is hard to give. It is possible that people in the TOOL group are more affected to the project and more innovative for the reason that they are working with new technology. But the other groups working with new technology (TOOL&CBT, TOOL&CLASS) aren't more innovative than the traditional groups. The conclusion is that there is no difference between the groups except the one above. We take the view that the groups are selected at random.

We had to test the reliability of the items involved. The limit was .60 (Cronbachs Alpha). Because of the size of the groups we had some problems with the reliability of the items. The variables that were useful (alpha > .60) are shown in table four.

Table 4 The variables used

Variable	Alpha
Work	-
Learning	-
Tool	
interface	.75
studiousness	.63
CBT	
interface	.75
feedback	.95
cooperative learning	.95
effects	.63
Class	
training	.87
support	.83
cooperative learning	.76
effects	.94
Paper	
presentation	.83
support	.86
advise	.70
help	.77
obtaining information	.73
Background	
attitude towards innovations	.73

Hypothesis 1 related to support With these items we tested the following hypothesis: Agents working with the computer (TOOL, TOOL&CBT, TOOL&CLASS) like the presentation and the interface of the computer more than the agents working pen and paper based (PAPER, PAPER&CLASS). This is not the case. However agents do like the presentation of their traditional handbooks and form more (Man-Whitney Test, n=36, p=.005 one tailed). The mean rank (15.52 for the computer and 25.27 for the traditional way) shows the advantage for the traditional form. This was supported by results on the interviews. Agents like the traditional presentation more because it is quicker (glancing through a manual) to look things up. Reasons for this preference may have to do with the construction and userfriendliness of the EPSS or the agents are not accustomed to the EPSS yet (they were working with it for four months when the evaluation took place). The used hypothesis was that the computer (TOOL&CBT, TOOL) would support the agents better while they are working compared with the traditional way (PAPER,PAPER&CLASS). The result is that there is no significant difference. The computer didn't support the agent better or worse (Man-Whitney Test, n= 36, p=.29 one tailed). This result is against all expectations. It was expected that the computer would provide a better support than the traditional methods.

Hypothesis 2 related to learning When we looked at the learning part the following hypothesis was stated; agents learning with CBT (TOOL&CBT) like the presentation and the interface of the CBT more than the agents who followed a classroom training and who had to deal with a teacher presentation (TOOL&CLASS, PAPER&CLASS). On the test (Man-Whitney Test, n=24, p=.012 one tailed) the mean rank, 9.25 for CBT and 15.75 for the classroom instruction shows that the presentation of the teacher was appreciated more. In the interviews the most common reason to like traditional classroom training more was the contact with other colleagues. They see training as a social event. In their daily work they don't have contacts with colleagues. They like seeing each other at a training. Now they are afraid that CBT will take them away their social event. The next statement was that agents learning with CBT like to learn alone (TOOL&CBT), . Agents in classroom instruction like to learn together with other colleagues (TOOL&CLASS, PAPER&CLASS). The answer on this hypothesis is that this is right. Agents in the classroom instruction do like to learn in cooperation with others and agents learning with CBT do like learning alone (Man-Whitney Test, n=24, p=.0007 one tailed). The last hypothesis related to learning was agents learning with CBT (TOOL&CBT) think that they learn more effective than agents in classroom training (TOOL&CLASS, PAPER&CLASS). In fact agents in classroom training think that they learn most effective in this way. The hypothesis is not true. CBT is not appreciated as most effective (Man-Whitney Test, n=24, p=.050 one tailed).

Next we looked at the results on the learning test. The test was split up in a case and in questions to test their knowledge. In the practical situation the agents had to give an ideal advise to a fictionary client. With this case the quality of the solution is measured. With the questions their background knowledge was tested. Both are important in their daily work. When we look at the results of the cases and we compare the groups trained with CBT (TOOL&CBT), classroom training (TOOL&CLASS, PAPER&CLASS) and no training (TOOL&PAPER) we see that there is only a difference between training and no training. Classroom training compared with no training shows a significant difference (T-test, n=24, p= .043, separate variance one tailed). CBT compared with no training also shows a significant difference (T-test, n=23, p= .018, separate variance one tailed). In both cases training was more effective than no training. this is not surprising. The difference on the case between CBT and the classroom training was not significant (T-test, n= 23, p= .24, separate variance one tailed). Conclusion is that it doesn't matter whether agents were trained with CBT or in a traditional classroom. When we look at the questions to test their background knowledge there is no difference between the group with CBT and the group with classroom training (T-Test, n=23, p=.149, separate variance one tailed). There is a significant difference between classroom training and no training ((T-Test, n=24, p=.009, pooled variance one tailed). The score of people that were trained was higher. CBT compared with no training didn't show a significant result ((T-test, n= 23, p= .060, separate variance one tailed).. That is remarkable. The standard deviation causes this effect (CBT standard deviation = 27.67, no training 41.860). The overall conclusion is that there is no significant difference between CBT and the traditional training.

Hypothesis related to work The company is training people to make more money in future. The next part will compare the sales results between the three groups. We only looked at one part of their sales. This results are related to the sold annuities in 1993 and 1994. Several other influences (like a difference in the political situation in the Netherlands) were not measured. It is hard to relate these results to the treatment. Knowing that these results are not only caused by the treatment we carefully state the following: the productivity of the group learning with the computer will be significantly higher in 1994 (the year they started working with the computer). First a comparison between the sales in 1993 and 1994 took place. The significant difference between the two years were split up between the groups (CBT, classroom training and no training). A one-way analysis of the variance was not significant (n= 36, p=.230, one tailed). The conclusion is that there is no difference in sales between the groups. It doesn't matter whether agents are trained or not, it has no significant effect on the selling of annuities. Finally we test the hypothesis whether agents working with the computer sold more than agents working pen/paper based in 1994. The group working with new technology (TOOL&CBT,

TOOL&CLASS, TOOL) and the group working in a traditional way (PAPER&CLASS, PAPER) were compared on their selling results. The expectation is; agents working with new technology will sell more in 1994 than agents working in a traditional way. This hypothesis seems not to be true (T-Test, n= 36, p=.23, one-way). There is no significant difference between the two. Working with the computer will not result in a higher productivity on annuities. Did the agents sell anything more at all in 1994 ? Yes, they did, but not all of them. The CBT group didn't sell significantly more (paired T-Test, n=12, p=.055). The group trained in a classroom situation did have a higher productivity (paired T-Test, n=12, p=.0014). The group without training did also do significantly better (paired T-Test, n=36, p=.015). The way people work didn't have any special influence. The group working with new technology has higher results in 1994 (paired T-Test, n=25, p=.003). The group working in a traditional way scored significantly higher too (paired T-test, n=19, p=.0052). The overall conclusion training doesn't contribute anything to the productivity in this situation.

Conclusions

We tried to evaluate the effects of EPSS on learning and productivity. The setting was a large insurance company in The Netherlands. This project was a pilot project. This pilot had a lot of limiting conditions. But that is not unusual in this type of research. Although we would have loved larger groups. We tried to measure EPSS in the field were the surplus value is expected. For that a framework was developed. In the framework are variables which have an impact on the effectiveness of the EPSS. The expectations in the first chapter were tested. In general the EPSS in this project is not so successful as in literature often is stated. This EPSS did have information, learning and advise. Although the researchers have some remarks on the development of the EPSS, it is not a badly constructed one. Maybe the integration of the CBT can be better (those small granules) but this lack of integration is not the reason that agents don't like the EPSS a lot when they have to learn with it. Of course there are reasons, like the social event reason, not related to the effects. But also on the effects the influence of EPSS is hardly measurable. Productivity doesn't increase. The learners results are almost the same as in the traditional situation. An advantage as just-in time learning is hard to see. Agents don't have the time to look up information. They postpone training. As a result the just-in time training becomes inadequate working. The employees didn't take the responsibility for learning . In future the direct managers has to take the responsibility for their learning. The advise and information part of the EPSS didn't do any better than the traditional manuals. The agents thought it is quicker to look up information in books. The overall conclusion is they like the old way better. What are the reasons for it. Is this the expected resistance? No, they told us some good things. They like the automation of certain tasks, like the fill up of forms and counting the benefits for their clients. As is stated by Carr (1992) they know have the time to do other things, like talking to their clients. And that is important. The agents also like it that they now have the possibility to show or present something to clients. This was harder in the traditional situation. Now they feel more professional and a client is trusting them more. Positive findings of EPSS haven been seen in the project. These advantages are on the whole related to controlling the costs. There is no direct improvement of productivity and learner benefits. Further research has to be done to improve EPSS and prove these findings in other settings.

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Principles of CBI Design and the Adult Learner: The Need for Further Research

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The increasing use of computer-based instruction in HRD applications is accompanied by a growing need for guidelines directing its effective design and use. Current research has failed to provide this guidance. Research deficiencies include a limited number of studies in many areas, contradictory findings, and questionable generalizability to adults in the workplace due to an almost exclusive use of students college age and younger as research subjects.

The development of faster, less expensive, more adaptable and more user-friendly microcomputers which can incorporate a wide range of software capabilities such as sound, graphics, and video has made a computer revolution in education and training a dramatic possibility. It has been predicted, for example, that, by the end of this century, most of our children's education will take place via computer (Lepper, 1985) and that 50% or more of all industrial training will involve computers by the year 2000 (Harrington, McElroy, & Morrow, 1990). Such expectations call for research aimed at identifying specific variables related to the effectiveness of computer-based instruction as an instructional methodology.

Computer-based instruction (CBI), or the process of instruction in which a computer is used to present instructional materials to a learner, has been studied diligently for more than three decades. The research suggests that, across content and educational levels, CBI is effective in improving performance and attitudes toward instruction as well as accomplishing the same learning objectives as conventional instruction in significantly less time (Dalton, Hannafin, & Hooper, 1989). However, the research on CBI and related variables has been conducted predominately in formal classroom settings with subjects college age or younger. Few studies aimed at assessing the effectiveness of CBI or identifying specific variables related to the effectiveness of CBI as an instructional methodology have been confirmed with adults above college age. Thus, while the literature suggests principles of effective CBI, a cogent question remains to be answered: To what extent are these principles applicable to adults in general and, specifically, to adults in a workplace setting?

Accompanying the increasing popularity and application of CBI in human resource development (HRD) contexts must come a clear understanding of whether or not the design principles we are relying upon are solidly grounded. The purpose of this paper therefore is to survey the research literature to identify the principles of effective CBI ; assess the adequacy of this research in terms of adult populations, particularly adults in the workplace; and make recommendations for a research agenda as related to CBI, adults, and the workplace.

General Research Findings

Learner Control of CBI A major advantage of CBI is seen in its ability to adapt to the individual needs and abilities of learners. One significant aspect of this adaptability is the potential of CBI to offer learners differing degrees of control over lesson pace, sequence, content, or quality of instruction;

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amount of lesson practice or review; the form, frequency, or content of feedback; when to test; when to terminate instruction; or some combination of these variables.

The issue of learner control is seen by some as the most important design issue in CBI (Jonassen & Hannam, 1987). Providing such control allows the learner to guide the response of the instructional program to suit that individual's needs as he or she perceives them (Williams, 1993; Taylor, 1987). The underlying assumption of learner control is that the learners themselves are best able to determine the type of instruction needed for effective learning. Providing for some degree of learner control therefore leads to enhanced learning performance.

However, the research results regarding the impact of learner control on learning performance in CBI are mixed. Some authors have found performance in terms of learning and retention to be significantly higher under learner control, as compared to more passive, program control (Ellerman & Free, 1990; Carrier & Williams, 1988). Others (Dalton, 1990; Kinzie & Sullivan; 1989) have found no difference in learning performance between learner control and program control. Still others (Pollock & Sullivan, 1990; Lee & Wong, 1989) have found learner performance under various forms of program control to be superior to that under learner control. There is some evidence that the equivocality of these findings may be dependent on a number of individual learner characteristics such as prior knowledge (Shaw, 1992), cognitive ability (Kinzie, Sullivan, & Berdel 1988), motivation (Morrison, Ross, & Baldwin, 1992), cognitive style (Carrier, Davidson, Higson, & Williams, 1984), or personality type (Kern & Matta, 1988).

Group Methods in CBI The potential that CBI offers for one-on-one interaction (one learner-one computer) has been forwarded as a major advantage of this instructional technology. This view asserts that learning is best in CBI when there is one student working with one computer because individual learning needs can be identified and addressed as well as individualized feedback and reinforcement developed and administered (Williams, 1993). However, some current research challenges this perspective. Webb (1987), for example, reviewed 14 studies comparing group and individual methods of instruction in CBI and found no study in which significantly greater learning occurred when students worked alone. Stephenson (1992), studying college business students in a spreadsheet CBI tutorial, found that students in dyads outperformed all individualized conditions. Dalton, Hannafin, and Hooper (1989) found that learners working in pairs significantly outperformed individuals in computer-aided instructional lesson. Johnson, Johnson, and Stanne (1985) found learners working cooperatively in groups of four produced a greater quantity and quality of daily work and demonstrated greater problem-solving skills than learners working individually or competitively. This and other research suggests that the nature of the interpersonal interaction present when groups of individuals work cooperatively is an important component in the effectiveness of CBI. Peer interaction, for instance, has been found to encourage high level elaboration (i.e., explaining) between students which leads to greater learning gains (Webb, Ender, & Lewis, 1986). Students working together in CBI have also been found to be able to produce ideas that individuals are unable to generate on their own (Webb, 1987) and to learn from others by observing and imitating the methodologies other students use in problem solving or task completion (Hythecker, Rocklin, Dansereau, Lambiotte, Larson, & O'Donnell, 1985).

Feedback in CBI Feedback is commonly defined as information provided to learners following a response that is intended to help the learner locate errors and correct mistakes (Schimmel, 1988). Feedback has been earmarked as one of the critical variables in the design of effective CBI because of the computer's capability to consistently provide a wide range of feedback information (Clariana, Ross, & Morrison, 1991). The limited research conducted on feedback in CBI focuses on performance improvement and comparisons of different feedback techniques. These techniques vary along a number of qualitative dimensions including content, frequency, and timing.

Feedback Content. Feedback content refers to the information provided to learners about the appropriateness of their response relative to the instructional content. The informational content of feedback is generally thought of as lying along a continuum of explanatory complexity from simple confirmation ("correct" or "try again") to various types of explanatory feedback (Schimmel, 1988). Several studies have compared the effects of various forms of feedback content on learning (Clariana, 1993a; Kim & Phillips, 1991). This research supports a hierarchy of feedback content which says that no feedback is less effective in terms of improving performance than confirmatory feedback which is less effective than explanatory feedback. Other evidence suggests that this hierarchy is not so well established and that the provision to learners of extensive information about why their answers are wrong is no more effective than offering minimal information (Schimmel, 1983). The overall implication of these findings is that the optimum level of feedback information may depend on the instructional setting, instructional content and objectives, and the individual needs of the learners.

Feedback Timing. Feedback timing has to do with when in the process of instruction feedback is delivered. Feedback may be provided either immediately after a learner's response or delayed for a period of time or number of responses (Clariana, et. al., 1991). The available research addressing the effect of feedback timing in CBI is limited and the results of what has been done are mixed. Some research points "toward small to moderate positive effects of immediate feedback' in the acquisition of behavior (Kulik & Kulik, 1988, p. 93). Other studies have demonstrated that the delay of feedback facilitates both acquisition of knowledge and the retention of learning (Gaynor, 1981; Sturges, 1978). Thus, whereas immediate feedback remains the most common feedback timing convention in CBI there is evidence that some delay of feedback may be superior under certain conditions.

Feedback Frequency. Frequency of feedback in CBI deals with the amount of information supplied by feedback as well as the technical possibility of applying feedback once (for example, after the first response), a second time consequent to a second try by the learner, or to allow the learner to continue making attempts followed by feedback until a correct answer is obtained (Clariana, 1990). Some writers have suggested that a multiple-try or answer-until-correct feedback strategy may improve learning performance to the extent that it engages the learner in additional cognitive processing following incorrect responses (Clariana, 1993b). Only limited research has been aimed at testing whether one or many responses with accompanying feedback is more effective. The findings of this research indicate that there is no significant difference in performance of learners with single-try versus multiple-try feedback.

Computer Anxiety Computer anxiety refers to a state characterized by a "fear of impending interaction with a computer that is disproportionate to the actual threat presented by the computer" (Howard, Murphy, & Thomas, 1987, p. 14). This state involves an array of physiological, attitudinal, and emotional responses that may occur when individuals interact or expect to interact with computers.

The current research on computer anxiety is inconclusive on two issues. First, to the extent that an individual's performance in any given situation is a function of his or her physical, emotional, or attitudinal state, computer anxiety is considered an important variable in CBI. This presumption is based largely on a rather extensive history of research linking high anxiety in general to decreases in performance and learning (Tobias, 1979). Although some research indicates that negative emotional reactions to computers can have a detrimental impact on the extent to which computers can be effectively used (Marcoulides, 1988) other studies provide contradictory evidence. Bracey (1988), for example, found a positive .71 correlation between computer anxiety and achievement in a computer information systems course.

A second unresolved issue has to do with the degree to which the rapidly increasing use of computer technology has been accompanied by a similar increase in the number of people who feel anxious about using computers. Some studies (Elder, Gardner, & Ruth, 1987; Glass, & Knight, 1987) show that from 30 to over 50% of respondents report attitudes indicative of computer anxiety. Other research (Massoud, 1991; Lewis, 1988) suggests that these figures overestimate the extent of computer anxiety and, moreover, that some populations are relatively unaffected by computer anxiety and have fairly positive attitudes towards computers. In sum, although the assumption persists that computer anxiety is an important variable in CBI, the research evidence is far from conclusive in terms of identifying or confirming its impact on performance as well as its presence across populations and settings.

Screen Design Screen design as a variable in CBI incorporates components such as text density, screen density, layout and location of information, and legibility. The literature in this area is largely propositional with only a few studies focused on determining if these components make a difference in learning. As with many of the studies done in computer based instruction, most of these studies have been done with student populations.

Text Density. Text density refers to the amount of information presented on the screen. High density text is assumed to provide more content-related information and more in-depth explanation of the information while low density text generally uses a more abbreviated outline format. Two studies (Morrison, Ross, O'Dell, & Schultz, 1988; Ross & Morrison, 1988) conducted with undergraduate teacher education majors examined the impact of text density on learning. Both of these studies found no significant difference in learning attributable to different text density levels.

Screen Density. Screen density refers to the proportion of print to white space on a computer screen. Some research suggests that learner preferences for screen density vary and that screen density may impact the efficiency of learning. Morrison, Ross, O'Dell, and Schultz's (1988) study of undergraduates found that learners preferred moderate white space and did not like the text spread over a relatively large number of screens because it forced them to switch screens too often. Other studies have established that reading efficiency in CBI is improved when text is double spaced (Hooper & Hannafin, 1986). No studies to date, however, have established a relationship between the degree of screen density and improved learning performance.

Location of Information. Martindale (1993) has argued for text schemas in CBI based on the assumption that text structures that are consistent over a range of programs or lessons ease progression through a lesson and facilitate the acquisition of information. Hooper and Hannafin (1986) have similarly argued that the integration of instructional content with consistent schemata and frame design in CBI helps to cue appropriate cognitive behavior and promote memory retrieval. The sparse research that has addressed these issues indicates that the consistent placement of information on a computer screen does help in the transfer of information and improvement of learning, suggesting that the location of information serves as a mediator of recall and functions as a cue to help organize memory search (Aspillaga, 1991).

Legibility. Legibility, or the ease of reading material from a computer screen, includes three variables - justification, line length, and leading. Justification has to do with line length and the amount of space between words. Full justification makes all lines the same length by varying the space between words; flush left justification has equal spaces between words but produces lines of varying length; and centered justified equally spaces words and balances the text around an imaginary line down the center of the page. The research on justification shows left justified text to be the most efficient convention, reading faster than both centered or full justified text (Hooper & Hannafin, 1986).

Line length deals with the optimum number of characters that can be displayed on a single horizontal line. Little or no research has been done in this area of CBI and, although some authors suggest that text is read more efficiently when presented with greater density (for example, 80 as opposed to 40 characters per line), the issue of what line length is best has not been settled.

Leading refers to the space between lines in computer generated text. As previously noted, several studies have reported that reading efficiency is increased when text is double spaced (Hooper & Hannafin, 1986).

Color, Graphics, and Animation. The increased technical capabilities of computers has made the incorporation of color, graphics, and animation into CBI a relatively simple task. Although these features of CBI can be impressive and easily draw a learner's attention, the question of whether they improve learning remains largely unresolved. For example, Baek and Layne (1988) found that the addition of color, while aesthetically pleasing, did not improve learning in a CBI lesson but that both graphics and animation did. Such gains in learning with animation are not, however, consistent across studies. Rieber (1990) reviewed 12 studies using animation and found no difference in learning in CBI with animation in 6 of those studies. On the other hand, it was noted that the students in lessons employing animation took significantly less time to answer questions covering lesson content. This may indicate that animation aids in the organization of material during the acquisition of information and in the reconstruction of material during retrieval.

CBI Research and Adult Learners

Learner Control The research on learner control in CBI has shown that such control is not unconditionally effective as a strategy to improve learning performance and that various individual traits appear to influence the impact of learner control on performance. This research leaves unresolved the more specific issues of what degree of learner control is best under which circumstances and with which learners, particularly adult learners above college age. Most of the studies in this area have been conducted with college age subjects or younger. For example, from the 28 studies reviewed for this paper only 2 reported results from subjects above undergraduate college age and over half (n=15) were conducted with high school age subjects or younger. Of the 2 studies done with adults, Ellerman and Free (1990) found higher levels of instructional sequence control in paired associate learning to be correlated with significantly better learning performance in subjects whose mean age was 27. Similar results were found for a group of students with a mean age of 23. A major conclusion of Shaw (1992), based on 6 years of research with computer-aided instruction at the U.S. Army Construction Engineering Research Laboratory was that, under CBI, adults are best served with relatively greater degrees of instructional control. Shaw summarized her research by stating that CBI "targeted at adult professionals who are evaluated on the basis of job performance and who need to learn while they work must be quite different from instructional programs for school children, whose objectives are subject matter mastery and whose evaluations are test scores" (p. 57).

In addition,, the contradictory findings with regard to learner control have been interpreted to indicate that some learners may lack the metacognitive skills to use instructional control effectively (Williams, 1993). To the extent that adult learners can be presumed to have developed more refined and effective cognitive strategies this interpretation suggests that adults may be better able than younger subjects to profit from learner control of instruction in CBI. Penland (1979), for instance, suggests that adult learners may prefer learner controlled instruction because they can set their own leaning pace, use their own style of learning, keep the learning strategy flexible, and impose their own structure on the learning project. Again, these and other questions regarding learner controlled CBI with adults in various settings have not been empirically tested and remain in large part unanswered.

Group CBI There is a rich body of research supporting the use of group methods as a means to promote effective learning in CBI. The general implication of these findings is that it is possible to design effective group-centered CBI for a wide range of learners. For example, different types of group interactions, including receiving explanations, making suggestions, and providing answers to specific questions, have been consistently found to be positively correlated with achievement gains among college age subjects (Webb, 1987). Whether these types on group interactions will be equally effective with learners above college age or adults in the workplace is largely unknown. No work currently in the literature has been done to investigate the ways in which the design or function of cooperative learning in CBI affects adult learners in different settings. The research thus leaves many questions unanswered regarding the effectiveness or dynamics of group CBI with adults, the optimum groups size for adults, or ways in which software can be designed for effective small group use with adults.

Feedback in CBI Nearly all of the feedback studies conducted have involved subjects of college age or younger leaving unaddressed many questions about the relationship between adult learners and the qualitative aspects of feedback in CBI. In general, the research conducted in this area suggests that instructional designers should seek "to encourage the mindful engagement most appropriate for the individual learner" (Clariana, 1993b, p. 71). This declaration, while confirming that different learners may have different preferences for different types of feedback, provides little guidance for the design and application of appropriate feedback in different settings with different learners. There are many ways, for example, in which adult learners may differ from younger learners in their feedback needs and preferences. In terms of feedback frequency, it is conceivable that the metacognitive abilities of adults allow them to make use of the additional information provided by multiple-try feedback while that same frequency of feedback may hinder the performance of less experienced learners. It is similarly possible that, to the extent that a differential in the effectiveness of feedback timing exists across populations, such a differential correlates with age. Cohen (1985) suggested that the metacognitive abilities of adult learners are better suited to delayed feedback, particularly that provided at the end of a lesson, because they are better able to use the information at that point in the lesson to summarize and organize information and to assess how they are progressing. The metacognitive abilities of adult learners may also enhance the effectiveness of more complex as opposed to simple confirmatory feedback. In short, despite its implicit value, feedback remains one of the least explored variables in terms of the nature of its impact on adult learning performance in CBI.

Computer Anxiety There is speculation in the literature about the negative effects computer anxiety may have on the self-worth or self-esteem of learners (Morrow, Prell, & McElroy, 1986), its power to alienate workers from their jobs (Elder, et. al., 1987), or even to lead to acts of subversion in the workplace (Baumgarte, 1984). It may be similarly speculated that adults in the workplace will exhibit higher levels of computer anxiety to the extent that they perceive computers as a threat to job performance or job security. Or that adults who view computer expertise as something that will improve their job performance will be relatively unaffected by computer anxiety. These views, however, are largely unsubstantiated by research. Indeed, there is little research establishing the incidence of computer anxiety across populations and settings, documenting the effects of computer anxiety on the human-computer interface, or the specific impact of computer anxiety on adult learning in CBI. More research is needed addressing these and other questions so that we may verify whether and to what extent computer anxiety threatens productivity and learning in situations in which computers are used for work or instruction.

Screen Design Most of the research done in the area of screen design has been done with samples from student populations. Intuitively, there is reason to question the applicability of these findings to adult learners because as individuals age, physical changes in eye sight, coordination, and reflexes naturally occur. These changes may, in turn, effect the impact of screen design elements on learning. For example, changes in visual acuity has implications for screen clarity and text legibility (print size, color, and so on) and its impact on efficiency of reading the computer screen. Older learners may therefore profit instructionally from larger print or more dramatic color distinctions. The cognitive or learning style differences of adult learners may have implications for the use of animation. Reiber (1990), for example, cited several studies conducted with adults and animation in CBI which collectively indicate that adults may be better able to visualize information and are therefore less dependent on visual aids such as animation or graphics. Similarly, the experiential or metacognitive differences adult learners may indicate a preference or need for less instructional support information during learning. If so, this would have implications for schema development in CBI and the amount or location of information presented on CBI screens.

Conclusion

Computer-based instruction is without question an increasingly popular instructional medium for adult educators and HRD practitioners. Accompanying the growing use of CBI is a concurrent need for solidly grounded design principles to assist us in the use of this technology. This brief survey of the literature has underscored two major shortcomings found in the research on CBI. First, in areas of learner control, feedback, and screen design existing studies are either very limited in number or the findings are inconsistent and inconclusive. As a result, there are few well established technical or didactic guidelines for designing effective CBI for different content areas, settings, or with different learners. Secondly, the findings that have been adequately confirmed are difficult to generalize to adults because the research in these areas has been done almost singularly with subjects of college age or younger. For example, of the 514 studies reviewed directly and in literature reviews for this paper, 467 were done with subjects of college age or younger while only 47 were done with adults. This emphasis is understandable to the extent that students represent a readily available and inexpensive population from which to draw the necessary research samples. Although the findings from studies employing these subjects may not be inaccurate, generalizing these results to adults is not readily justifiable either in terms of relevance to workplace problems or in terms of sample representativeness. The combined effect of these two shortcomings, limited research -based guidelines and findings suspect in terms of generalizability, raises questions about the usefulness and acceptability of current CBI design principles for adults in the workplace. Research examining the application of CBI variables in organizational settings with non-student populations is needed to extend the generalizability of current findings.

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The Setting of Goals for Skill Acquisition

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Despite the fact that setting specific objectives is a widely advocated principle in the training literature, evidence suggests that the setting of specific goals during initial phases of skill acquisition can be dysfunctional. This study examined the effects of using two different types of learning objectives during management training. Results indicated that the goal manipulation did not lead to significant main effects, however, an interesting interaction was observed and is described.

Delineating specific training objectives that include the conditions and criteria for demonstrating competency is a widely advocated principle in the training literature (Tracey, 1984). Yet evidence suggests that the setting of specific goals during initial phases of skill acquisition can be dysfunctional. This study examined the effects of assigning either learning goals or performance goals as training objectives during a management development program to determine if the focus of the goal influenced trainee attitudes or training success.

Specific goals focus attention on and mobilize effort toward goal accomplishment (Locke & Latham, 1990). This leads to increased effort and, in turn, increased performance. A substantial amount of evidence has been amassed documenting the beneficial effects of goal setting (Locke & Latham, 1990). The effectiveness of setting goals for task performance assumes, however, that individuals have the knowledge and ability to perform the task. For novel tasks, which are frequently the type of tasks taught in training programs, people may have inadequate skills and/or strategies. Under these conditions, increased effort will not translate into performance. With required management training, people may even infer that they are being sent to the training because "the organization" believes that they are lacking in these skills which could lead to low self-efficacy regarding their ability to learn and practice new and, perhaps, complex methods of managing people.

The results of several previous studies suggest that difficult specific goals are not effective, and can be harmful in improving performance for novel, complex tasks (e.g., Earley, Connolly, & Ekegren, 1989; Huber, 1985; Kanfer & Ackerman, 1989). Dweck (1986) argued that performance goals promote defensive strategies that can interfere with challenge seeking whereas learning goals encourage individuals to increase their competence and to understand or master something new (Dweck, 1986).

Tasks performed by supervisors and managers are typically seen as more complex than many other types of organizational tasks (Wood, Mento, and Locke, 1987). Management tasks often require a combination of specific knowledge and skills and are assigned to only a few individuals specially chosen (i.e., promoted) by organizations. For example, effective interviewing requires not only a knowledge of the techniques and the law, but also good communication, evaluative, and social skills. It would be expected that trainees would view the tasks being taught in management development programs to be both novel and complex which raises questions regarding the best type of goals to use.

In addition to examining the effects of focus of the goals, two other independent variables were also examined, self-efficacy and accountability. Together these three variables represent a trainee characteristic (self-efficacy), a training design characteristic (form of training objective), and a work environment characteristic (accountability). These categories of variables have been identified as important determinants of learning and transfer of training (Baldwin & Ford, 1988). Also examined was motivation to learn as an intervening variable as goals are primarily a motivation tool. The hypothesized relationships are summarized in Figure 1.

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Figure 1. Model of Hypothesized Relationships

Self-efficacy
Goal Type -> Motivation to Learn -> Reactions
Accountability

Learning
Motivation to Transfer
Behavior Change

Method

The study was conducted in a field setting using an experimental design. The sample for this study consisted of 64 first-line and middle managers from a hospital who were enrolled in a comprehensive management development program. The management development program was required of all hospital managers at every level within the organization. The managers were assigned to one of four training groups based, in part, on their work schedules. The four training groups were then randomly assigned to either performance goal or learning goal conditions. The management development program consisted of a series of three hour training sessions held once per week for eight weeks. All four groups received the instruction during the same eight-week period. All classes were conducted at a local hotel to minimize interruptions, typically a problem with training in a hospital environment.

The second author conducted the training for the four groups in as similar a manner as possible. A variety of training methods were utilized during the management development program. The methods used included lecture/discussion, small group discussions, behavioral modeling, large group debates on relevant issues, role plays, written and oral practice exercises, and demonstrations. The decisions regarding which training method was used for each topic depended on the material being covered and the desired outcome, as indicated by the performance goal for that topic. Active participation in discussions and all activities was encouraged. The sessions were videotaped and participants could review specific sessions if they wished or make up missed classes.

In all four training groups, the training objectives for the entire program were provided and reviewed during the first session and the objectives for each session were again reviewed at the beginning of subsequent sessions. For the performance goal condition, the training objectives were developed using the guidelines provided by Tracey (1984). These objectives specifically indicated not only what would be learned in the management program, but how the trainee was expected to demonstrate his or her mastery of that new knowledge or skill. For the learning goal condition, a parallel set of training objectives were written that similarly communicated what would be learned but did not contain any mention of evaluation. Examples of these objectives are provided below.

> *Participants will correctly prepare, in writing, 6 behavioral interview questions and provide the rationale for rating an interviewee on each question. (performance goal).*
> *Participants will learn to prepare behavioral interview questions and ratings. (learning goal).*
> *Participants will correctly demonstrate, in class, active listening (performance goal).*
> *Participants will learn active listening (learning goal).*

At the beginning of the first session, participants completed a questionnaire assessing background information and the measures of self-efficacy, accountability, and motivation to learn. Individual differences in expectations of personal mastery were measured with the Sherer, Maddux, Mercnadante, Prentice-Dunn, Jacobs, & Rogers' (1982) general self-efficacy scale. Accountability items gauged trainees' perceptions of whether they would be held responsible by hospital management for learning the content of the training program. The desire to learn the content of the training program was assessed using Noe & Schmitt's (1986) motivation to learn scale. Reactions to the program were obtained at the end of the last session along with the measure of motivation to transfer. Participant satisfaction with the content and administration of the program was assessed using several open-ended questions and five quantitative items. The desire to use the knowledge and skills mastered in the training program on the job was measured by Noe & Schmitt's (1986) motivation to transfer scale. The success of the manipulation was also assessed at this time.

Throughout the training, participants were required to demonstrate their mastery of the material. Learning was assessed by having trainees complete written assignments or in-class exercises. These activities, evaluated and scored by the trainer, provided the trainees with opportunities to apply the management development program material and demonstrate their proficiency. Three months after the program, managers of the participants provided information on participants' use of the techniques taught in the program. The manager of each participant (all of whom had earlier received the same training) was asked to evaluate how their employee's behavior differed from before the training.

Results

Correlation coefficients, Analysis of Variance, and multiple regression were employed to examine the hypotheses. Means, standard deviations, reliability estimates, and intercorrelations are presented in Table 1 for the measured variables. Prior to examining the specific hypotheses, a series of ANOVAs and Chi^2 tests were conducted to assess whether the random assignment of training groups to conditions resulted in equivalent conditions. No significant differences were evident across conditions in age, gender, race, education, managerial level, managerial experience, span of control, job tenure, or organizational tenure.

Table 1. Means, Standard Deviations, Reliabilities, And Intercorrelations

Variable	Mean	SD	1	2	3	4	5	6	7
1. Self-Efficacy	3.93	0.39	(.85)						
2. Accountability	2.82	0.60	.11	(.66)					
3. Motivation to Learn	3.80	0.50	.27*	.31**	(.70)				
4. Reactions	4.40	0.42	.46**	.28*	.29*	(.84)			
5. Learning	0.00[1]	7.71	.12	.27*	.06	.15	(.31)		
6. Motivation to Transfer	4.39	0.40	.43**	.27*	.34**	.69**	.21*	(.81)	
7. Behavior Change	3.79	0.48	.14	-.05	.19	.11	.29**	.15	(.94)

N Ranges from 55 to 60, * $p < .05$, ** $p < .01$.

[1] The mean for learning is zero because the assignments and exercises were standardized.

Regarding the manipulation check, the managers in the two different conditions did not respond differently to the item "Learning objectives were provided for each session" [$m = 4.52$ for both, $F\ (1, 56) = 0.00$]. Thus the two sets of objectives were equally salient, as expected. Also as expected, managers in the performance goal condition responded significantly higher ($m = 4.13$) to the item "The objectives indicated how we would be evaluated to demonstrate that we had learned the concept" than those in the learning goal condition [$m = 3.63$, $F\ (1, 56) = 5.97$, $p < .01$].

The first set of hypotheses suggested that self-efficacy, goal type and accountability would each be significantly related to the managers' motivation to learn. The correlations in Table 1 show that self-efficacy and accountability were both significantly related to motivation to learn ($r = 0.27$ and 0.31 respectively). To assess the effect of the goal type manipulation on motivation to learn, a one-way ANOVA was conducted. The results of this ANOVA failed to support the hypothesized relationship [$F\ (1, 59) = 0.20$]. To assess the combined effects of goal type, self-efficacy, and accountability on motivation to learn, multiple regression was employed. All three variables were entered as a group in a single hierarchical step. The results from this analysis are presented in Table 2. The trainee, training, and work environment characteristics, as a set, accounted for a significant 18% of the variance in motivation to learn. Consistent with the preceding univariate analyses, both accountability and self-efficacy had significant beta weights while goal type did not.

Table 2. Results of Regressing Goal Type, Self-Efficacy, and Accountability on Motivation to Learn

Independent Variable	Total R^2	Beta	F
	0.18		3.62^{*}
Self-efficacy		.26	3.96^{*}
Goal Type		-.10	0.61
Accountability		.31	7.83^{**}

* $p < .05$, ** $p < .01$.

The second set of hypotheses predicted that motivation to learn would be significantly correlated with four training outcome variables -- reactions, learning, motivation to transfer, and behavior change. The correlations provided in Table 1 support two of these four relationships. Motivation to learn was significantly correlated with positive reactions to the training program ($r = 0.29$) and with motivation to transfer ($r = 0.34$). Motivation to learn was not, however, significantly related to actual learning ($r = 0.06$) and only marginally related to behavior change ($r = 0.19$, $p = .07$).

The final hypothesis was that motivation to learn would mediate the effects of goal type, self-efficacy, and accountability on the outcome measures. It has already been shown that self-efficacy and accountability significantly relate to motivation to learn and that motivation to learn is significantly related to reactions and motivation to transfer. To support the mediational hypothesis it remains to be demonstrated that trainee, training, and work environment variables are related to the training outcomes and that those relationships become negligible when controlling for motivation to learn. The correlations in Table 1 indicate that self-efficacy was significantly correlated with reactions ($r = 0.46$) and motivation to transfer ($r = 0.43$) but not with learning ($r = .12$) or behavior change ($r = 0.14$). Accountability was significantly correlated with reactions ($r = 0.28$), learning ($r = 0.27$), and motivation to transfer ($r = 0.27$) but not with behavior change ($r = -.05$). A series of ANOVAs was conducted to examine the relationship between the goal type manipulation and the training outcomes. The goal manipulations did not have a significant main effect on reactions [F (1, 55) = 2.14], learning [F (1, 62) = 0.00], motivation to transfer [F (1, 56) = 0.01], or behavior change [F (1, 58) = 0.24].

Hierarchical multiple regression was employed to assess the combined effects of goal type, self-efficacy, and accountability on the training outcomes and the mediating role of motivation to learn. Only reactions and motivation to transfer were included in these analyses as motivation to learn did not relate to learning or behavior change. For both of these training outcomes, goal type, self-efficacy, and accountability were entered in a single hierarchal step. In a separate regression equation, motivation to learn was entered in a first hierarchal step followed by goal type, self-efficacy, and accountability in a second hierarchical step. The results of these analyses are provided in Table 3. With both reactions and motivation to transfer as the dependent variables, only self-efficacy had a significant beta weight, and this effect remained significant after controlling for motivation to learn. Therefore, the hypothesized mediating role of motivation to learn was not supported.

While the goal manipulation did not have a main effect on motivation to learn, an interaction between goal type and motivation to learn was evident in effecting behavior change. The form of this interaction indicates a strong, positive relationship between motivation to learn and behavior change for the managers given learning objectives and a weak, negative relationship for managers in the performance goal condition.

Conclusion

Several authors have suggested that the setting of specific goals for trainees may be detrimental to learning. This study was the first to actually compare the effects of using performance versus learning goals when communicating learning objectives. Self-efficacy and accountability were significantly related to motivation to learn. In turn, motivation to learn was significantly related to positive reactions to the training and motivation to transfer. Self-efficacy and accountability had direct effects on training outcomes as well. While the goal manipulation did not display the main effects hypothesized, a significant interaction was evident that was consistent with the expected results. The goal manipulation did not have a main effect on motivation to learn or behavior change nor were motivation to learn and behavior change significantly related. When taken together, however, a strong positive relationship was evident between motivation to learn and behavior change only for subjects in the learning goal condition.

While the effects of the goal manipulation were not as strong as anticipated, this may have been due to the nature of this particular program. All of the trainees were practicing managers enrolled in a management development program. As such, while the specific information and techniques being presented were new, the trainees did have considerable experience with the topics being covered. It remains for future research to determine whether the use of learning rather than performance based objectives has a greater impact when the content of the training is less familiar.

Table 3. Results of Regressing Goal Type, Self-Efficacy, Accountability, and Motivation to Learn on Reactions, Learning, Motivation to Transfer, and Behavior Change

Dependent Variable	Step	Independent Variable	Change in R^2	Beta	F
Reactions	1		0.28		6.44^{**}
		Self-efficacy		.40	10.63^{**}
		Goal Type		.13	1.13
		Accountability		.23	3.58
	1		0.07		4.04^{*}
		Motivation to Learn		.27	4.04^{*}
	2		0.21		4.94^{**}
		Self-efficacy		.38	8.51^{**}
		Goal Type		.14	1.29
		Accountability		.20	2.36
		Total R^2	0.29		4.94^{**}
Motivation to transfer	1		0.25		5.53^{**}
		Self-efficacy		.42	11.55^{**}
		Goal Type		-.08	0.38
		Accountability		.23	3.54
	1		0.11		6.13^{*}
		Motivation to Learn		.32	6.13^{*}
	2		0.16		3.43^{*}
		Self-efficacy		.37	7.99^{**}
		Goal Type		-.05	0.13
		Accountability		.18	2.07
		Total R^2	0.29		4.94^{**}

* $p < .05$, ** $p < .05$

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The Use of Work Analysis Tools as a Foundation for Interventionist and Noninterventionist Human Resource Functions in Small Organizations

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A Trainee Selection System for New Technology Work Requirements was developed from the literature and applied in an organization to demonstrate the multiple purposes of work analysis tools in support of employee training and selection for training. The system also represents the potential for collaboration among human resource and technical personnel to address individual performance and staffing needs in small organizations that implement technology to meet their business goals.

Businesses frequently plan capital investments in new, automated equipment as one way to gain an advantage in the marketplace. Small organizations, in particular, are able to buy and use increasingly sophisticated technology. The acquisition and use of technology is one of several strategies that can positively influence productivity. Technology is viewed as a means to reduce lead time and inventories, improve quality throughout production processes (Majchrzak, 1988), substitute capital for labor (Chaykowski & Slotsve, 1992), reduce direct labor costs (Susman & Chase, 1986), and enhance competitive market position (Carnevale, Gainer, & Meltzer, 1990; Goodman & Griffith, 1991). The positive impact of a technology strategy for any organization depends on the degree to which a chosen technology is implemented successfully (Goodman & Griffith, 1991; Majchrzak, 1988). However, successful implementation is often constrained by the lack of information on, or inflated expectations for technology, poorly planned and managed implementation support processes, and skill deficiencies. Small organizations' effective and efficient use of technology is constrained by deficient internal expertise required to operate and maintain new technology. "The assessment of a new technology's impact on skills is inherently difficult. The technology vendor is an interested party when it comes to performance estimates and is rarely available for advice on implementation" (Adler, 1986, p. 11).

Business strategies that require full, timely implementation of new technology but that demonstrate little regard for the skills and capacities of persons responsible for its operation and maintenance may undercut the expected benefits from the use of new technology. A lack of attention to human resources may result in lower productivity, skill shortages and associated cost increases , and a labor force that is not competitive with competing firms (Rothwell, 1987). "The de facto policy of not planning the adjustment of either organization structures or practices to meet new technological requirements begs the important question of the extent to which the firm is optimizing through the process of recapitalizing" (Chaykowski & Slotsve, 1992, p. 327). Decision makers require information about the human resource requirements that are critical to new technology implementation success, and human resource and human resource development professionals should do more to identify, select, and train the human resources necessary to support new technology planning and implementation. "While a wide range of personnel policy instruments exists to adjust mismatches between supply and demand, selection and training techniques are the most obvious even if they cannot always be implemented rapidly enough to overcome the time lags inherent in any system which attempts to relate business planning and human resources" (Rothwell, 1987, p. 62). Sound selection and training processes that provide operational support for new technology implementation have been neglected (Cardy and Krzystofiak, 1991), ad hoc selection processes adopted for new technology are less likely to have met validity requirements, and may vary when selection involves internal transfer of personnel (Rothwell, 1987).

Theoretical Framework

Changing work requirements in organizations expecting a marketplace advantage from the use of new technology can be examined using work analysis tools which generate information to support

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both noninterventionist and interventionist human resource functions, that is, selection and training for work with new technology. The literatures on technology, work analysis, and personnel selection support an examination of changing work requirements imposed by new technology, and methods to analyze work and select workers for new technology training.

Technology. The technology literature is a source of information for defining technology and understanding the changes it produces in the work place. Technology is "a system of components which act on or change an object from one state to another" (Goodman & Griffith, 1991, p. 263), the sum of knowledge supportive of action (Weick, 1990), or "knowledge of cause-and-effect relationships embedded in machines and methods" (Sproull & Goodman, 1990, p. 255). Definitions of technology become less abstract when they are linked to applied settings. Weick (1990) described technology in an applied setting as a technical system. A technical system refers to a specific configuration of machines and methods used to produce a particular, valued outcome in business or industry. Goodman, Griffith and Fenner (1990) describe technology as a four-component system which includes equipment, materials, a physical environment, and programs. "Every instance of technology in the real world is one particular combination of machines and methods; no two instances are likely to represent precisely the same combination" (Sproull & Goodman, 1990, p. 255). When any one of the equipment, process, or material components of technology change, the worker will be affected.

New Technology. Chaykowski and Slotsve (1992) defines new technology as "new machinery or equipment that significantly changes the methods of production or operations, the type of product, or the organization of work or jobs" (p. 321). New technology can also be defined indirectly in terms of consequences in applied settings. Whether it is described as advanced, automated, high-tech, increasingly complex, or integrated, new technology implies change for organizations that apply it. Historically, automation-related enhanced skill requirements have been common among maintenance functions (Davis & Taylor, 1976). "Flexible automation calls for skilled workers who can frequently change its parameters and adapt to it" (Safizadeh, 1991, p. 66), and workers require broader ranges of taught capabilities to cope with evolving technologies (Campbell & Warner, 1992). "The traditional mechanical and electrical skills are to some extent being replaced by the need for electronic skills and the ability to diagnose the causes of failure in complex, inter-connected systems" (Harrison, 1990, p. 183). The new technology technician is responsible for troubleshooting, quality control, and some functions performed by displaced workers. The work requires knowledge of multiple subject matter domains and the conceptual capacity that allows them to consider potential causes of and solutions to complex problems. The difference in cognitive-level work is reflected in the change in the maintenance function, from repair of primarily mechanical equipment to diagnosis and repair of integrated systems that are controlled electronically. When management automates production jobs, workers responsible for maintenance of new technology need system understanding, and operational and troubleshooting capacities (Swanson, 1991; Swanson, 1994) that are pertinent to maintaining any technical system. Although the technology literature indicates that new technologies require greater dependence on mental capacities, work analysis offers human resource professionals basic tools for defining and documenting new work requirements.

Work Analysis. Work analysis is defined as an attempt to fully describe the job performance universe and its parameters (Lawshe, 1975), an effort to examine specific observable, partially observable, and unobservable work behaviors (Swanson & Gradous, 1986), the collection of information describing job behaviors and activities (Harvey, 1991), a systematic examination of the job and the context in which it is performed (Society for Industrial and Organizational Psychology, 1987), a systematic effort to document the procedural, systemic, and knowledge tasks that underlie worker expertise (Swanson, 1994), and a description of the job, not the worker (Goldstein, 1986). Harvey (1991) proposed that a job analysis (1) elaborate on observable job behaviors and unobservable behaviors that can be associated with products of the job, (2) provide a "description of work behavior independent of the personal characteristics or attributes of the employees who perform the job," and (3) offer information that is "verifiable and replicable... should the accuracy or validity of the job analysis be challenged" (p. 75).

The purpose of work analysis is to collect data about work that is suitable for the scope (e.g., one job or multiple, related jobs) and level of specific detail needed to support a specified human resource function. For example, work analysis has been described as an intervention and prerequisite to any attempt to establish validity of employee selection devices, (Goldstein, Zedeck & Schneider, 1993), as a basis for performance evaluation and coaching (Prien, Goldstein &

Macey, 1987), or as support for the performance improvement of individuals (Swanson, 1994). Selection may require data on major tasks and some sub task level, performance appraisal may require only task level data, and training may require highly specific sub task data.

Based on the different applied needs, work analysis data will range from general to specific–from a general listing of major tasks to successively specific levels of tasks and sub tasks. Most purposes for work analysis require that descriptions of work represent the performance universe (Lawshe, 1975) to the fullest extent possible. Failing to document any major part of the job or including data that is not part of the job, leads to deficiency or contamination problems when applying work information (Goldstein, 1986).

Work Analysis Method Choice. The choice of analysis methods depends on its anticipated human resource management application and the degree to which serves the organization's purposes (Levine, Thomas, & Sistrunk, 1988). Methods must be structured to enhance the potential for data reliability (Cornelius, 1988), and their costs considered relative to other methods that may provide data of similar quality. Work analysis experts therefore, recommend the use of multiple methods so the advantages of one method offsets the disadvantages of another (Carlisle, 1986; Goldstein, 1986; Steadham, 1980; Swanson, 1982; Swanson 1994; Swanson & Gradous, 1986). The requirement that a method is structured or systematic stems from the need to validate information using expert judgments or ratings (Harvey, 1991), and when needed, to provide evidence to the courts which require that methods are describable, and that they specify necessary entry-level competency (Thompson & Thompson, 1982).

Personnel Selection. Personnel selection is a human resource function which is used by organizations to increase the likelihood of hiring persons who will succeed in jobs for which they are chosen. Selection culminates "in a decision to hire one or more applicants for employment and not to hire others" (Guion & Gibson, 1988, p. 349) based on "human variability and individual differences" (Klimoski, 1993, p. 99). Individual differences or the theory that individuals differ reliably, is a central concept of selection. "The goal of the selection process is to capitalize on individual differences in order to select those persons who possess the greatest amount of particular characteristics judged important for job success" (Cascio, 1987, p. 271). Essential work requirements must be specified, and individuals must be assessed or measured on work-related characteristics and the derived scores analyzed and used to make personnel decisions. Any effort to select "more qualified" candidates based on assessment scores implies a predictive hypothesis.

Validity and Validation Strategies. Validity is the "appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores" (Society for Industrial and Organizational Psychology, 1987, p. 4). Three strategies for establishing evidence used to justify inferences about test results are described as criterion-related, content-relevant, and construct-related validation in the personnel selection literature. Each strategy relies on a common starting point–an understanding of the work for which individuals will be selected. Using information from a work analysis, subject matter experts specify behaviors critical to the work, and define the knowledge skills, and capacities that underlie important work behaviors. "An inference drawn from currently available information about some aspect of future job performance" should rely on any relevant content, construct, or criterion dimension for its justification (Binning & Barrett, 1989, p. 482).

Establishing valid selection procedures in small organizations is constrained by organization size. Small organizations may lack expertise among persons who manage and implement human resource policies and practices. Human resource departments are frequently understaffed, and human resource personnel may not have been hired based on the competencies required to understand and conduct validation research. Levy-Leboyer (1994) reviewed selection and assessment practices and concluded that "small organizations usually have one person who has no training in psychology in charge of personnel management" (p. 183). Another constraint in small organizations relates to the number of individuals employed in any one position. Small sample sizes eliminate criterion-related validation due to the need for adequate power to detect statistical differences.

When small organization constraints limit criterion-related validity evidence, a content-relevant strategy can be used to link well-defined task behaviors and logical expert judgment to establish work-work requirement-work requirement measurement linkages. Five areas are important when using expert judgments: (1) establishing the work tasks, ratings on important factors, and relationships between tasks and work requirements; (2) developing test items or interview questions; (3) rating the degree of linkage between selection system content and work requirements; (4) rating the degree to which successful performance on predictor items is related to effective performance on the job; and, (5) developing rating systems for selection devices (Sackett & Arvey, 1993).

Despite constraints to selection procedure validation in small organizations, selection practices can be improved by establishing structured processes to gather and use work analysis data, to collect and maintain candidate assessment data, and to make personnel decisions. By extension, selecting workers who possess the necessary knowledge, skills, and capacity to succeed in training represents a potentially useful application of personnel selection procedures. This type of application of selection procedures is appropriate when training will lead to jobs for which work requirements have changed.

Summary. Systematic efforts to align supportive human resources with new technology are demanded in the technology literature. Trainee selection represents one avenue to improve on new technology implementation processes, and is applicable when work has changed fundamentally, and an organization plans to develop current personnel to meet new work requirements.

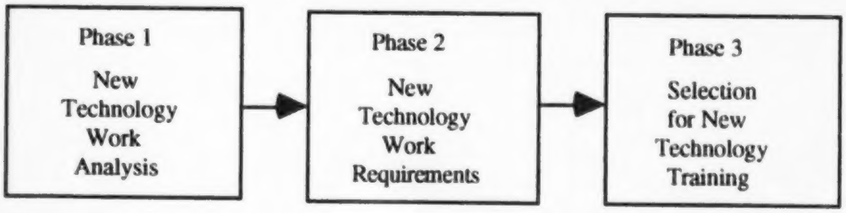
Work analysis data is the primary input to the selection process. During the selection process, work analysis data is analyzed, and important work requirements are specified. Work requirements must be defined as individual attributes to be measured. Based on the relatedness of the measures to performance, scores from trainee assessments can be used to infer an individual's performance potential.

Trainee Selection System for New Technology Work Requirements

In this case, a trainee selection system for new technology work requirements was developed and applied. The trainee selection system used work analysis information gathered for use in developing new technology training content and instruction as the basis for defining the most important new technology tasks and work requirements underlying trainee selection. Measures of important work and training requirements were used to assess candidates for new technology training.

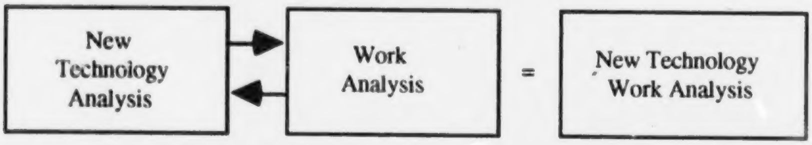
Development and Application of a Trainee Selection System. A three-phased process model and tools that contribute to the analysis of new technology work, definition of new work requirements, and selection of workers for new technology training was developed from the literatures on technology, work analysis, and personnel selection (Figure 1). The system, based on the model, was applied in a small organization that purchased new technology and intended to develop and deliver training to support the new technology. Inherent in the plan to support the new technology was an assumption that current technical support personnel were adequately skilled to address corrective and preventive maintenance needs of the new technology. The company had traditionally promoted workers from within as a matter of human resource policy, and was becoming aware that the assumption of adequate technical support needed reconsideration. Therefore, the need to define new technology-related work requirements and develop internal new technology maintenance expertise provided the opportunity to use work analysis tools efficiently to support the selection of capable individuals as well as their development. This study focused on the collection and use of work analysis data for the dual purposes--the development of training content and instruction, and the definition of new work requirements and selection of trainees.

Figure 1. Trainee Selection System for New Technology Work Requirements


Phase 1
New Technology Work Analysis
Phase 2
New Technology Work Requirements
Phase 3
Selection for New Technology Training

Phase 1: New Technology Work Analysis. Phase 1 contained two core processes: New Technology Analysis and Work Analysis (Figure 2). The new technology analysis process examined technical features of the equipment component of technology and task characteristics from the technology literature (Majchrzak, 1988; Majchrzak, Fleischer, Roitman & Mockray, 1991). A subject matter expert (SME) used scales and a standardized inventory to define differences between current and new technologies. Using the same expert, the work analysis process defined procedural, systemic, and knowledge tasks of technicians required to maintain a new technology (Swanson, 1994). The two analyses were conducted in order to compare and validate findings of one method against the other.

Figure 2. New Technology Work Analysis

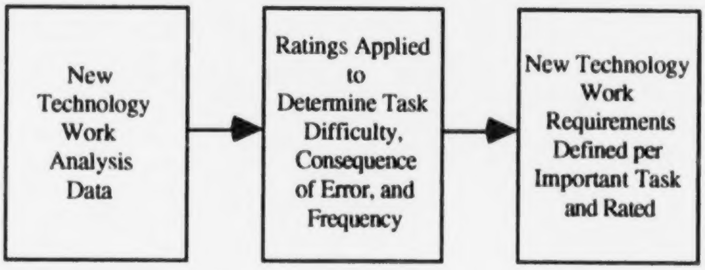


Summary–New Technology Work Analysis. Steps in the New Technology Analysis process included: (1) identification of a qualified SME, (2) data collection using technical features and task characteristics rating instruments and an inventory, (3) SME interviews, (4) data analysis, and (5) completion of a comparative overview and task-by-technology worksheets. Work analysis, the second of two Phase 1 processes included the following steps: (1) definition the purpose of the work analysis, (2) identification of an SME who provided task information and rated new technology work tasks, (3) analysis of procedural, systemic, and knowledge work data, (4) writing of task statements, (5) rating task importance, and (6) definition of the most important new technology work tasks.

Data collected using new technology analysis yielded information on the basic differences between one of the organization's current technologies and the targeted new technology. Data collected using procedural, systemic and knowledge work analysis methods provided highly specific task information used to develop training content. Specific information was also summarized in task statements that were written at a moderate level of specificity. To determine task importance, the SME rated 100 moderately specific tasks on three dimensions: difficulty, consequence of error and frequency. Seventeen most important new technology work tasks were derived from the rating process and became inputs to determining new technology work requirements and minimum requirements for training success during Phase 2 of the trainee selection system–New Technology Work Requirements.

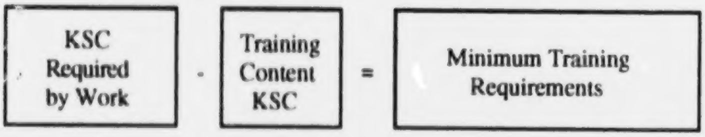
Phase 2: New Technology Work Requirements. Phase 2 of the trainee selection system contained two core processes: (1) translation of work analysis information to important work requirements and (2) definition of minimum requirements for training success. The translation process required that the most important work tasks defined in Phase 1 are used to specify new technology work requirements. New technology work requirements are important knowledge, skills, and capacities that underlie important new technology work tasks. These work requirements were defined by the work analyst in writing and reviewed by the SME. The analyst

Figure 3. New Technology Work Requirements


New Technology Work Analysis Data
Ratings Applied to Determine Task Difficulty, Consequence of Error, and Frequency
New Technology Work Requirements Defined per Important Task and Rated

and SME then rated the requirements for their importance to work performance (Gatewood & Feild, 1987)(Figure 3). Specification of new work requirements is a prerequisite to determining minimum training requirements. Minimum training requirements were determined by comparing the most important work requirements to the content of new technology training, and by asking the SME/trainer to eliminate any knowledge or skill requirement that was addressed by training (Figure 4).

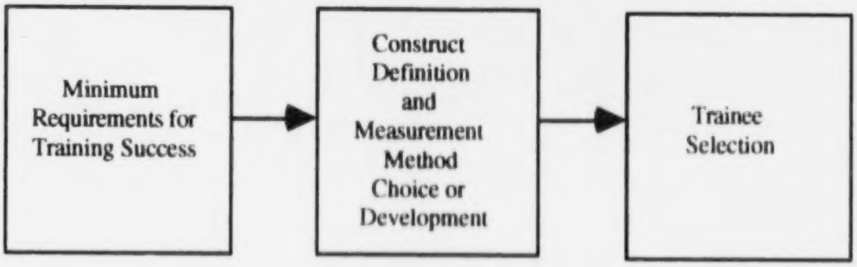
Figure 4. Minimum Training Requirements



Summary–New Technology Work Requirements. In phase 2 of the Trainee Selection System for New Technology Work Requirements, new technology work analysis information was translated into important new technology work and training requirements. Steps in the process included: (1) defining work requirements (knowledge, skills, and capacities) that underlie the most important work tasks, (2) linking work requirements to tasks, (3) rating work requirement importance, and (4) defining minimum new technology training requirements. Five minimum training requirements were identified. Minimum training requirements became inputs to Phase 3 of the Trainee Selection System for New Technology Work Requirements.

Phase 3: Trainee Selection for New Technology Training. The purpose of Phase 3 is to assess current employees on the degree to which they meet training requirements. Phase 3 contained three processes: (1) assignment of priority to training requirements, (2) determination of measurement methods used to assess potential trainees, and (3) administration of trainee selection procedures (Figure 5). Five training requirements defined in Phase 2 served as inputs to Phase 3. The new technology SME assigned a percentage weight to each training requirement. Percentages totaled 100% and designated the relative value of each training requirement measure (Gatewood & Feild, 1987). Measurement methods were defined using the subject matter expert as a consultant on the knowledge components. Training candidates were also assessed on their knowledge of basic electrical relationships and the function of electronic circuits. Standardized tests suggested as valid measures of cognitive constructs were chosen to assess three cognitive work requirements, fluency of ideas, deductive reasoning, and inductive reasoning (Fleishman & Reilly, 1992).

Figure 5. Trainee Selection for New Technology Training


Minimum Requirements for Training Success
Construct Definition and Measurement Method Choice or Development
Trainee Selection

Summary--Trainee Selection for New Technology Training. Announcement of the training opportunity and the organization's intent to select trainees followed the standard human resource department procedure for posting jobs. Training candidates were provided with a description of the training requirements and a brief description of the trainee selection process. Assessment data were reviewed with participants. Decision makers reviewed the range of scores which provided input about to the capabilities of current technical support staff relative to new technology maintenance.

Work Analysis Tools and Multiple Human Resource Functions

New technology work was examined using analysis methods derived from the technology and work analysis literatures. Systematic methods to define new technology work and training requirements, and selection procedures were derived from the employee selection literature. The phases and process components of the Trainee Selection System for New Technology Work Requirements enabled a systematic contribution of human resource and human resource development personnel to the implementation of new technology.

Data collected in Phase 1 of the trainee selection system was used to develop the content of a new technology training intervention. Subsequent noninterventionist use of the same data in Phases 2 and 3 led to definition of new work/training requirements and selection of trainees. Highly specific work analysis information used for training was recast as moderately specific new technology tasks and used to specify minimum training requirements for trainee selection.

An important issue in collecting and using work analysis data for multiple purposes was addressed by this study. Prior research provides few guidelines on the level of specificity to which work must be described for various human resource practices. For example, human resource development (HRD) professionals document work in highly specific detail in order to improve the performance of individuals through training, while human resource planning and management professionals document work at general levels in order to specify broad work requirements for employee selection or compensation purposes. Human resource department managers should plan for multiple uses of work analysis tools and data. Data collected by HRD professionals can be used concurrently to support other human resource functions. When collected, highly detailed work analysis information becomes a significant resource that can be adapted and used to support employee selection, performance management, or compensation planning. HRD professionals miss an opportunity to generate additional value from work analysis data collection by ignoring its multiple use potential.

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Effectiveness of Employee Selection Process for Large Group and Individual Hires

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A systematic and comprehensive employee selection process based on a thorough job analysis should be able to identify qualified job applicants regardless of the number of people assessed within a given period. A comparison of production employees hired in naturally-occurring groups of different sizes shows no significant difference in their average job performance rating. A properly designed employee selection system can allow an organization to effectively and efficiently hire employees individually or as a group.

A basic tenant of human resource development is that the effectiveness of an organization depends upon the capability of its employees. Selecting the employees who possess the required expertise, or who have the potential to develop this expertise, is critical to achieving the goals of the organization.

Personnel selection is a process culminating in a decision to hire one or more applicants for employment and not to hire others (Guion & Gibson, 1988). One aspect of personnel selection is the use of pre-employment testing to identify those candidates who possess, or have the potential to develop, the necessary expertise. According to Guinn (1993), the advantage of employment testing is that it is the most reliable and accurate means of selecting from available applicants. Effective testing allows the organization to hire more qualified job applicants, reduces the number of qualified applicants who are denied employment, and increases employment opportunities because larger numbers of applicants can be considered (Martin & Slora, 1991).

An assessment center is one form of a personnel selection system that can be studied to verify whether a process will consistently provide the right employee for a particular job. This study attempted to review the components of an employee selection process and to learn if the process was affected by the number or rate of employees assessed.

Review of Relevant Literature

A productive workforce can be hired through a comprehensive and systematic selection process that includes pre-employment testing. These selection procedures are useful when some applicants are qualified and some are not (Martin & Slora, 1991, p. 69). If every applicant was qualified, there would be no need for a selection process since anyone hired would perform adequately.

A survey by the Center for Workplace Issues reports more than 60% of 577 companies surveyed have implemented or are considering implementing skills-testing as a condition to employment. Another 29% have, or are, considering the use of personality/aptitude testings (Randall, 1992).

The growing use of tests is influenced by an increased knowledge about the testing instruments, a competitive job market, and a company's need for high-performing employees (Munches, 1989). The increased use of tests has also been attributed to clearer definitions of acceptable practice and guidelines established by the Equal Employment Opportunity Commission, the American Psychological Association, the National Council on Measurement in Education, the American Educational Research Association, and the Society for Industrial and Organizational Psychology (Rudner, 1992).

The effectiveness of pre-employment testing is a function of three factors: (a) the correlation between test scores and job productivity, (b) the percentage of applicants being hired,

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and (c) the proportion of applicants which are classified as successful by a test (Rudner, 1992). The payoff is a more competitive workforce in terms of skills and productive work behaviors (Guinn, 1993). However, there is danger in substituting test results for background checks and traditional managerial responsibilities. The ideal combination is testing and face-to-face interviews (Munches, 1989), or a combination of initial interviews, test results, job samples, final interview, and reference checks (Guinn, 1993).

Employee selection, pre-employment testing, the validity of assessment centers, and job performance are all content areas that have to be explored to understand the elements of a selection system. Each of these areas is reviewed briefly.

Employee Selection. Employee selection is critically important for an organization and has long-term consequences for the individual and the organization. Leibler and Parkman (1992) suggest a systematic approach to the tasks of personnel selection: (a) describing each position to be filled, in terms of specific functions that must be performed effectively, (b) analyzing each position, to identify the skills, knowledge, and other characteristics necessary to perform these functions, (c) determining the selection criteria, characteristics that an individual must possess at the time of hiring, as well as those that will be developed (through training or other means) while on the job, and (d) developing systematic, objective procedures for assessing the extent to which each candidate meets the selection criteria and for subsequent development of those individuals selected. (p. 259). According to Bruce (1969):

> The goal of selection is prediction. Will the applicant do well in the job for which we are considering him? . . . The precise and complete answer can come only by putting the man on the job, and waiting a reasonable period to find out how well he has done. This is obviously impossible for both the company and the applicant. (p. 56)

According to Cascio (1986), the recruiting, screening, and selecting of employees involve legal, environmental, and workforce utilization issues. The screening and selection methods must include reliability and validity of measurement in addition to reference checks. One common selection practice is to review resumes or application forms and interview those candidates that appear most qualified. Tiffin and McCormick (1965) state that interviews are subjective and assume that accurate information is being gathered. The interviewer must be skilled at eliciting responses, valid at evaluating and judging the answers, and limit his or her own biases.

The person who must make the hiring decisions may be influenced by a recommendation or reference from well-known and respected people. Ralston and Yoder (1989) asked 300 personnel directors to rank three fictitious candidates based on letters of reference from high, low, and unknown status. The results suggest that high-status references had a positive influence on the selection decisions of otherwise equivalent candidates.

Pre-employment Testing. Pre-employment and employment testing may be defined as procedures for determining job suitability that is accomplished by examining skills, knowledge and/or physical capabilities of an employee or candidate according to a predetermined set of objective guidelines (Arthur, 1991, p. 11).

Psychological tests are commonly employed as aids in occupational decisions (Anastasi, 1988). Other types of occupational tests include special aptitude tests (such as psychomotor, mechanical, clerical, and computer-related) and general intelligence tests (including Wonderlic Personnel Test). Job related tests include assessment centers and simulation activities.

Lawshe and Balma (1966) classified industrial tests as mental ability, job knowledge and mechanical abilities, physical skills, and temperament and interest. However, they warned that there were "no consistent validity for the employment use" of temperament and interest tests (p. 137).

There are warnings to the blind use of tests in the selection of workers. The primary concern for employee selection by testing is the determination of the characteristics being measured and identifying the proper test (Martin & Slora, 1991). Bruce (1969) warns that "uncritical acceptance of tests is as foolish as uncritical rejection" (p. 60). Lawshe and Balma (1966) argue that the tests must be shown to be valid and reliable through research and proper use for the situation. The tests should be objective, non-discriminating, and show a correlation between the test results and job performance (Arthur, 1991). The ability of pre-employment tests to predict an employee's future success in the workplace can be 82% to 92%, compared to 14% accuracy of interviews (Mancebo, 1992).

Because hiring decisions may be influenced by subjective factors, there is a trend to use more objective methods, such as assessment centers, psychological tests, and personality inventories to judge a candidate. LaRue (1989) described assessment centers as tools for staff development, promotion, and personnel selection. Although his study focused on positions in library administration, the general principles may be applied to other fields of employment.

There is, however, difficulty in the reliable prediction of performance in trade jobs due to complex and highly varied work responsibilities. Hattrup and Schmitt (1990) studied the wide application of aptitude testing in personnel selection in business and industrial settings and found that the application of these tests often resulted in large economic gains over existing selection procedures.

For example, Hattrup and Schmitt (1990) assessed the ability of aptitude and content-related tests to predict job performance in trade-level positions. They studied 275 males and 31 females journey-level apprentices in eight trades. The subjects were given four aptitude tests and five tests of content taken directly from job tasks. Their job performance was assessed, also. The results showed no significant difference in the predictive ability aptitude or content-related tests.

Because there are differences in training achievement and job performance, a good predictor of achievement or performance could yield a large gain in workforce productivity. Hunter (1989) reviewed the relationship between general cognitive ability and both training and job performance, finding that general cognitive ability (a phrase that is preferred to "intelligence") is the best known predictor of job performance and training success.

Validity of Assessment Centers and Pre-employment Selection. While the employer may generate benefits from assessment centers and pre-employment selection, there is a question as to the validity and fairness of such procedures. Gaugler, Rosenthal, Thornton, and Bentson (1987) conducted a meta-analysis of assessment center validity. They analyzed fifty studies of assessment centers and found, in part, that validity was higher when criterion was used for prediction, when several evaluation devices were used, and when the assessors were psychologists rather than supervisors. They suggest that assessment centers are valid for predicting employee success on the job in general and for specific situations, although the results must be interpreted with caution due to the complexity and variable nature of assessment centers.

Pynes and Bernardin (1992) compared the validities of on the job performance predictions resulting from mechanical (paper and pencil tests) versus consensus (agreement among evaluators) derived assessment tests. The study, which used a sample of 110 police candidates, finds no significant differences between the mechanical and the consensus approaches for the prediction of on the job performance. The study also finds that the two approaches have almost identical selection ratios by race and sex.

If designed properly, assessment centers can offer a relatively accurate and comprehensive appraisal of an individual's potential and of the person's training and development needs. Dulewicz (1992) reported that the three stages of the design greatly affect the success of an assessment center. The three stages are:

1. Program design -- using a designer with proven expertise, performing a job analysis, and ascertaining the key competencies required for successful performance at the level for which performance is being assessed.
2. Selection and training of assessors -- crucial and requires ample time to be completed.
3. Follow up -- including long term monitoring of how the results from the assessment centers are used.

However, Dulewicz also identified several shortcomings of assessment centers, such as: (a) inadequate specifications of target competencies. The competencies should be behavioral, separate, comprehensive, and focused on the future, (b) badly designed. The assessment centers should be highly related to cultural practices and the competencies assessed, (c) little or no assessor training, (d) inadequate or nonexistent follow-up.

Rudner (1992) stated, that in using pre-employment tests, special attention must be paid to issues of bias, legal rulings, validity generalization, exaggerated expectations, test quality, misuse, publishers' claims, alternative assessment, and honesty tests. These concerns can be minimized and the validity of the assessment center can be maximized if the company ensures that the: (a) content of the assessment instrument - whether interview or formal instrument - is job-related, (b) instrument serves a legitimate business purpose, (c) instrument should be developed to meet professional standards, and (d) application of the instrument meets with professional standards.

Job Performance. According to Gray, Abram, McKinney, and Billings (1978), job performance is complex and encompasses such things as:

> quality, quantity, skills, technical knowledge, ability to work without supervision, attendance, punctuality, cooperation, communication skills, problem solving skills, teamwork, interpersonal skills, safety, good attitudes, and initiative. The list could go on forever. (p. 265)

Tiffin and McCormick (1965) identified the criteria of job performance as the quantity of work, quality of work, learning time, tenure, absenteeism, promotions, job sample, and ratings. These criteria must be selected to be reliable and relevant to the job. A similar list of job performance measures was proposed by Lawshe and Balma (1966). They identified four classes of criteria as production data, personnel data, judgment by others, and job samples. The production data should include quality, quantity, time, earnings, and sales (as appropriate). Personnel data should include absenteeism, length of service, rate of advancement, training, time, and suggestions.

To measure job performance, the ideal method would be to analyze a specific job and create an instrument to measure that performance. A feasible approach would be to select an instrument which contains dimensions believed to be meaningful as judged by someone familiar with the job (Gray, Abram, McKinney, & Billings 1978).

Problem

The review of relevant literature reveals a variety of related terminology and discussions about the propriety of using a systematic selection process. There also are suggestions about proper procedures, legal concerns, and warnings to use a battery of instruments in the selection process. Yet, to the best of our knowledge, there is no information about the effectiveness of a selection process at different rates of hiring.

For example, organizations may hire a new employee to replace a worker who retired. Or, a company may start a new production line and must hire large numbers of workers in a short period. Will the selection process be equally effective in these two situations?

The selection process must be able to successfully identify those job candidates who posses the required knowledge, skills, and abilities no matter the rate of candidates going through the selection process. If a selection process can identify those applicants with the required expertise, or the potential to develop that expertise, and if an organization must select employees at different rates to meet its staffing needs, then the selection process must be effective despite the rate of hiring.

Question. The main research question was to determine if there is a significant difference in job performance for employees who were hired as a group (i.e., staffing needs for the start of a new line) when compared to employees who were hired to replace individual workers?

Method

A large Midwestern manufacturing company worked with a local vocational school to design an employee selection process that required job candidates to:

1. Respond to job position notices posted through established employment agencies and publications.

2. Complete a job application form. (For each position available, an average of ten job candidates is randomly selected from all applications.)

3. Score a minimum of 23 points on the combination of Wonderlic Industrial Personnel Test score and the number of years of work experience. Wonderlic scores may range from a low of eight to a maximum of fifty. A minimum of one year work experience is required with a maximum credit of five years no matter how long an applicant had worked elsewhere.

4. Score a minimum of 31 points by adding the Valpar/2000 Test results to the Wonderlic and work experience points. Valpar/2000 (previously known as MESA) ranges from a high score of zero to a low score of six. To obtain a commutative score, the results of the test were converted so that a raw score of zero equaled twenty, one equaled eighteen, and so on.

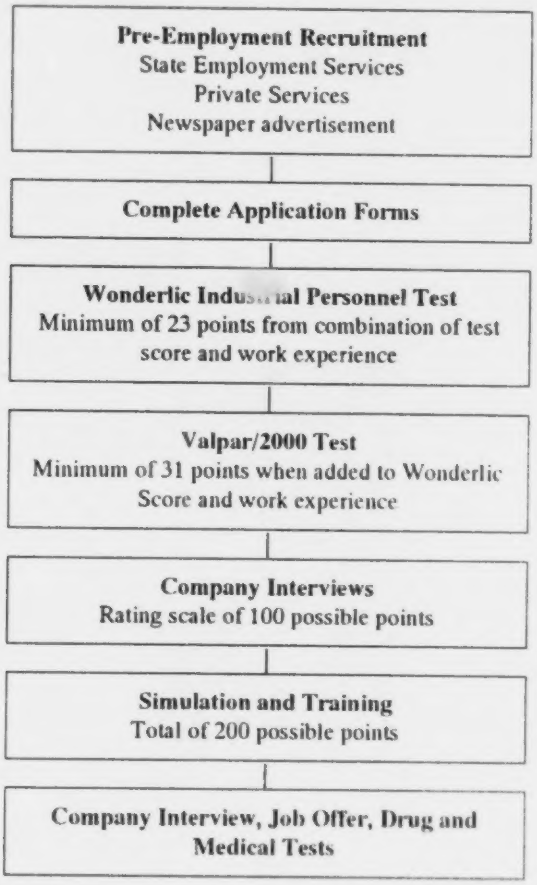
5. Complete a personal interview with the company's human resource representative.

6. Participate in a twenty-hour job simulation / training session at the vocational school.

7. Complete a drug and medical test following a second interview and after the job offer was made.

Each candidate must successfully complete each step to move through the selection process. The various tests, interviews, and simulations have pre-established standards to ensure a systematic, fair, and unbiased process. All instruments and standards were selected based on a job analysis completed by representatives from both the company and the vocational school.

Figure 1: Electronics Production Worker Selection Process


Pre-Employment Recruitment
State Employment Services
Private Services
Newspaper advertisement
Complete Application Forms
Wonderlic Industrial Personnel Test
Minimum of 23 points from combination of test score and work experience
Valpar/2000 Test
Minimum of 31 points when added to Wonderlic Score and work experience
Company Interviews
Rating scale of 100 possible points
Simulation and Training
Total of 200 possible points
Company Interview, Job Offer, Drug and Medical Tests

Data were collected for production workers at the manufacturing plant. This population included workers hired between February 1986 and December 1993. Of these workers, 44 were hired on an individual basis to replace employees who retired, quit, or otherwise left the company. Between April 1991 and February 1992, a mass hire of 190 workers was conducted to meet the staffing needs of a new production line. This provided the study with two naturally-occuring groups of different sizes.

The employees' performance on the job was measured using the Employee Performance Appraisal (EPA) form published by Martin M. Bruce Publishing, Inc., an independent firm specializing in the evaluation of industrial personnel. This instrument requires supervisors to evaluate an employee's performance in seven areas: (a) quantity of work, (b) quality of work, (c) job knowledge, (d) initiative, (e) interpersonal relationships, (f) dependability, and (g) potential. This instrument was selected based on Emery's (1980) reported inter-rater reliability coefficients of .75 to .90. Also, Gray, et al. (1978) correlated EPA scores with other measures of job competence and reported correlations of .76 and .93.

The supervisors were trained in the proper administration of the EPA form. Each employee was rated by the supervisor who could best rate the performance. A total of 21 employees was not rated because no supervisor could provide adequate knowledge about their performances. All subjects with no EPA score were dropped from the analysis. This left a total of 175 subjects in the group called Mass Hire and 38 in the Replacement group.

The internal validity of this study was a concern since the measure of job performance was generated from data collected through the Employee Performance Appraisal instrument. The EPA instrument included published reports of reliability and an unpublished history of use in a variety of industrial settings. The areas of job performance measured by this instrument also matched the criteria of job performance identified by a review of relevant literature (Tiffin & McCormick, 1965; Lawshe & Balma, 1966). Supervisors were instructed to follow the established procedure of forced ranking the employees to minimize bias and halo effects.

External validity is ensured because the data were collected from the entire population and generalized back to that population.

The data were analyzed using SPSS/PC+ Version 5.0, a statistical software package from SPSS, Inc.

Assumptions. This study relies upon the assumptions that the supervisors completed the Employee Performance Appraisal (EPA) forms conscientiously and according to proper procedures. Each supervisor was instructed in the precise method of completing the forms. Directions were printed on the EPA forms. The procedures minimized biased ratings and ensured each worker was ranked according to his or her individual performance on the job.

Limitations of the Study. There are certain limitations inherent in an ex post facto, or causal comparative study. The information was gathered from existing records, which means that relationships among test scores and job performance may be established, but no cause-and-effect can be implied. In fact, some factors may be naturally linked (the commitment necessary to complete the selection process may transfer to the commitment a worker displays on his or her job).

The study was designed to determine the ability of the selection process to identify qualified job candidates. It was not designed to study employee satisfaction, motivation, morale, honesty, cost-effectiveness of employee selection, or other characteristics and factors that may be of interest to an employer.

This study examined job performance of existing production workers. The study was unable to project the performance of candidates who failed to complete the selection process and, therefore, were not hired by the company. It is possible that potentially excellent workers were not hired for reasons that are unrelated to the selection process.

Results

The research question was to determine if there is a difference in the average job performance between employees selected on an individual basis and those selected as part of a large group.

To test the research question, a mean score was calculated for the total EPA scores for each group. These scores were compared by a *t*-test for differences between independent means (Hopkins, Glass, & Hopkins, 1987, p. 155). A statistically significant difference was determined using a two-tailed test with a confidence interval set *a priori* at .95.

Because the absolute value for the calculated *t* (1.02) is less than the absolute value for the critical value of *t* (1.972 for alpha equal .05), there is no statistical difference between the groups. Therefore, we accept the possibility that the job performance of workers selected as part of a large group is equal to the job performance of workers hired on an individual basis.

Table 1: T-Test for Independent Samples of Mean EPA Score by Group Size

Variable	Number of Cases	Mean	SD	SE of Mean
Mass Hire Selection	175	130.5200	43.802	3.311
Replacement Selection	38	138.4211	41.498	6.732

Mean Difference = -7.9011

Variances	Calculated t-value	df	Critical *t* value	Confidence Interval = 95%
Equal	-1.02	211	7.768	-23.218, 7.416

Summary and Discussion

Human resource development is concerned with training and non-training solutions for performance problems within an organization. Employee selection, which can be viewed as a non-training part of a human performance system, attempts to match the skills required by the organization with those skills possessed (or could be developed) by the employee. This study investigated a specific assessment center to learn if its employee selection process was affected by the number or rate of employees assessed.

The results indicate that the selection process can identify qualified people regardless of how many candidates are evaluated. There are several practical implications that could be taken from this study. For example, a company must plan, organize, and coordinate the entire hiring process. This could include recruitment, selection, orientation, and training. If one or two new hires are brought into the company, these efforts may not be cost effective. However, if twenty or thirty new employees are hired, then the HRD department could offer these services in a more cost effective and efficient manner.

In addition, HRD professionals and other managers can benefit from knowing that all new employees will have been evaluated by the selection process equally. This means that all employees, whether hired as a group or as a replacement, will have certain knowledge, skills, and attitudes that are relevant to their new jobs. A selection process that consistently determines a match between the employee's skills and the requirements of a job can provide a baseline for other organizational decisions, such training and career development. Likewise, an employee who has successfully completed the selection process will have a better understanding of the job and the organization's expectations.

To gain these benefits, the selection process must be systematic and based on a formal job analysis. A properly designed employee selection system could allow an organization to effectively and efficiently evaluate job candidates and then hire qualified employees based on immediate needs or economies of scale.

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The Use of Pre-Hire Assessment Tools for Manufacturing Direct Labor

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Attendant to the changing profile of the labor pool are shifts in norms and expectations which complicate the recruitment, hire, and retention of workers. Many industries are affected including the labor intensive field of contract electronics manufacturing and the identification of assessment instruments which can predicit the success of direct labor personnel will be of great use in the selection and hire of employees. Three instruments have been in use (Work Keys Reading, Work Keys Applied Mathematics, and the Job Candidate Profile) and the pilot study analyzes the relationships which may exist between test scores and employee success. Results indicate that high scores may not be predictive of success in all environments and that interpretation of scores is highly dependent on the job functions and organizational culture involved.

Organizations in the 1990's encounter labor pool characteristics unlike any other is recent history. The workforce is growing slower than any time since 1930, and estimates suggest that from 70% to 85% of the available labor is currently employed (Boyett & Conn, 1991; Johnston & Packer, 1987). The average age of workforce participants is rising and the pool of young workers entering the labor market is shrinking. More women are entering the workforce, and established minorities and recent immigrants represent larger shares of the available labor pool (Johnston & Packer, 1987). Attendant to the changing profile of this available pool are shifts in norms and expectations which complicate the recruitment, hire, and retention of this available worker group.

The growth and expansion of enterprise depends largely on the ability to attract and retain qualified workers. While personal service industries have received the greatest amount of attention, many traditional and emerging industries are affected. This includes the labor intensive field of contract electronics manufacturing. In this emerging and highly competitive manufacturing niche, flexibility, timeliness, and quality are critical, and the key factors supporting organizational success. While production technology has impacted this emerging industry, there is a lack of flexibile and modifiable automation to address the assembly functions necessary for quality printed circuit board and electromechanical assembly (EMA) production. Therefore, these organizations rely heavily on utilizing an increasing number of skilled and versatile direct labor employees. Due to this dependence, there is a growing need to develop hiring strategies which can effectively identify those applicants most likely to succeed.

Many strategies are employed to screen, select, and hire qualified employees. Assessment centers are one such strategy in use in the past several decades (Alexander, 1979). While much has been written on the use of assessment centers for managerial personnel (Bassett, 1991; Bray & Grant, 1966), the use of assessment centers in the selection of direct labor has only recently been adopted (Schmidt & Hunter, 1992). Overall, little has been published concerning the use of assessment instruments as a predictor of retention and job performance for direct labor positions. Given the

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characteristics of the current labor pool, assessment instruments which can predict the retention and success of direct labor personnel will be of great use in the selection and hire of individuals in labor intensive industries such as contract electronics manufacturing.

Statement of the Problem

A pilot study assesses if the use of a job applicant profile instrument and work related literacy instruments can effectively predict the success of direct labor employees in a contract electronics manufacturing environment. For purpose of the study, success is determined through measurements of retention and performance.

The independent, or predictor variables for the study are three applicant profile characteristics - dependability, working safety, and people relations; and two areas of academic skill - applicant reading ability, and applicant applied mathematics skills. The dependent, or criterion variables are job performance and retention.

Research Questions

The study will seek to answer the following research questions.

1. Do applicant profile and work related literacy tests predict subsequent job performance in direct labor positions?
2. Do applicant profile and work related literacy tests predict employee retention in direct labor positions?
3. Are scores of younger applicants on the JCP instrument more predictive of performance and retention than scores of older applicants?

Methodology

Data Source. The data are gathered in a contract electronics manufacturing host firm of approximately 500 employees. Current expansion needs of the organization require the hiring of 100+ direct labor employees. The organization has implemented a pre-hire assessment center utilizing three assessment instruments designed to measure worker dependability, safety, people relations, reading skills, and math skills. Within the context of the research design, a purposive 100% sample of hired workers yields the data for analysis. The study population is limited to only those who complete the assessment instruments and are subsequently hired into a direct labor position. Age groups are broken out as those subjects less than 30 years of age and those subjects greater than or equal to 30 years of age at the time of hire. These age divisions were selected to reflect common age cohort breakdowns (Howe & Strauss, 1993).

Measures to be Utilized. The independent variables are measured by the scores on three assessment instruments: Job Candidate Profile - JCP (Kamp, 1991), Work Keys Reading - WKR (The American College Testing Program, 1994), and Work Keys Applied Mathematics - WKM (The American College Testing Program, 1994). The dependent variables are measured using organizational records and subjective performance data. The measures of the independent variables are obtained at the time of application and measures of the dependent variables are obtained at a time six to nine weeks post-hire.

The JCP instrument is designed to assess an applicant's suitability for work in a manufacturing environment along four dimensions: dependability, working safety, driving safety, and people relations. Individual JCP scores reflect a cumulative percentile ranking from 0 to 100 as well as percentile rankings for each dimension. Because the positions involved do not require driving, scores along this dimension are not analyzed. Scores along the other three dimensions are weighted equally.

The WKR and WKM instruments are designed to assess an applicant's skill in reading and applied mathematics. Testing is preceded by a job profiling process in which the target positions are reviewed to determine the minimum reading and mathematics skills necessary to effectively perform the job (The American College Testing Program, 1994). The organization under study has only hired applicants who met or exceeded these minimum levels therefore the data will be unable to determine if individuals scoring lower than the predetermined minimums demonstrate poorer job performance. Scores on the WKR and WKM tests are integers ranging from 3 to 7.

The dependent variables are job performance and retention. Job performance has been divided into soft skills performance and hard skills performance. Soft skills performance has been defined as dependability, safety, and people relations. Dependability is measured as a ratio of attendance hours to opportunity and safety is measured as the number of safety incidents in which the employee is involved. People relations is measured subjectively by the employee's immediate supervisor who responds yes or no to the question "Has the employee demonstrated any problems working with other people?".

Hard skills performance is defined as the physical and mental skills necessary to complete job functions such as interpreting documentation, assembly, test, component identification, and soldering. Hard skills performance is measured by a cummulation of subjective ratings made by the employee's trainer and immediate supervisor. Both trainer and supervisor are asked to rate the employee's skill performance on a six point scale. The scale ranges from unacceptable to outstanding and includes ratings of: performs far below expectations, performs slightly below expectations, performs slightly above expectations, and performs far above expectations. The two ratings are added to arrive at a single measure of hard skills performance. The use of a total performance score is expected to reflect both ongoing job performance as well as performance during training. This measure is considered most appropriate as the Work Keys assessment does not specify prediction of success in training vs. ongoing performance. Equal consideration of performance ratings during both the training phase and subsequent functioning are intended to yield the most comprehensive measure of performance. The second dependent variable, retention, is measured as yes - the employee remains employed with the organization, or no - the employee is no longer employed with the organization.

Analysis of Data. The relationships between WKR, WKM, and JCP scores, and the employee's subsequent performance are determined using Pearson's Correlation Coefficient. Statistical significance is determined by the one-tailed honestly significant correlation coefficient at .05 alpha (Hinkle, Wiersma, & Jurs, 1994). The coefficient of determination (r^2) is also calculated independent of significance tests to reveal the proportion of total variance in performance which can be associated with the variance in WKR, WKM, and JCP scores. Additional correlations are calculated for those subjects less than 30 years of age (<30) and greater than 30 years of age (>30). Data for analysis has been obtained for 21 subjects. Eight are less than 30 years of age and thirteen are greater than 30 years of age.

The relationships between WKR, WKM, and JCP scores, and retention are analyzed using a comparison of means. The mean assessment scores of those employees who are no longer with the company (retention - no) are presented with the mean assessment scores of those employees who remain with the company (retention - yes). Additional means for those subjects <30 and those subjects >30 are calculated to describe any age dependent relationships.

Results

The Pearson's Correlation Coefficients obtained for the relationships between test scores and performance data are listed in Table 1.

Table 1. The Correlation of WKR, WKM, and JCP Dependability Scores to Employee Performance

	Hard Skills Performance			*Attendance Ratio*		
	<30	*>30*	*Total*	*<30*	*>30*	*Total*
Work Keys Reading	.03 (r^2=.00)	.26 (r^2=.07)	.23 (r^2=.05)			
Work Keys Applied Math	.20 (r^2=.04)	.26 (r^2= 07)	.29 (r^2=.08)			
Job Candidate Profile						
Dependability				-.18 (r^2=.03)	-.41 (r^2=.17)	-.39* (r^2 = .15)
Overall JCP Score				-.55 (r^2=.30)	-.02 (r^2=.00)	-.13 (r^2=.02)

N = 21; $n^{<30}$ = 8; $n^{>30}$ = 13

* significant at .05

Comparisons between means were necessary for measures of retention and people relations as these outcomes were defined bilaterally as yes or no. The results of the comparisons of means are listed in Table 2.

Table 2. The Comparisons of Means for Employee Retention by Test Score and Age

	Employed Yes *n = 17* *Mean Score*	*Retention* *Employed No* *n = 4* *Mean Score*	*Difference* *Yes - No*
WKR (score range 3 to 6)			
<30	5.17	5.00	+0.17
>30	5.18	4.00	+1.18
Total	5.18	4.50	+0.68
WKM (score range 3 to 6)			
<30	5.00	5.50	-0.50
>30	4.54	4.00	+0.54
Total	4.70	4.75	-0.05
JCP Dependability (score range 6 to 98)			
<30	43.00	69.50	-26.50
>30	64.27	92.00	-27.73
Total	56.76	80.75	-23.99
JCP Safety (score range 21 to 99)			
<30	60.66	88.00	-27.34
>30	74.00	49.50	+24.50
Total	69.29	68.75	+0.54
JCP People Relations (score range 21 to 99)			
<30	59.60	88.50	-28.90
>30	74.64	65.00	+9.64
Total	69.35	76.75	-7.40
JCP Overall Score (score range 33 to 95)			
<30	54.50	82.00	-27.50
>30	71.09	69.00	+2.09
Total	65.24	75.50	-10.26

N = 21; $n^{<30}$ = 8; $n^{>30}$ = 13

The authors were unable to calculate data for safety incidents as no safety incidents occurred during the course of the study which involved subject employees. Furthermore, it was not possible to calculate mean data for measures of people relations as no employees involved in the study were seen to have exhibited difficulty working with others.

Discussion

The pilot study resulted in one statistically significant finding. Additional review of the data does however reveal several trends which are important not only to further study, but to the continued application of the assessment practice.

The single significant finding is a negative correlation between the JCP Dependability score and attendance suggesting that the higher an applicant scores on the Dependability dimension, the more absent they may be from work. This finding has interesting implications for the use of the JCP instrument. While a higher JCP score indicates a higher percentile, it may not necessarily indicate better attendance. The particular type of job function and work environment are intervening variables and, for the organization under study, higher Dependability scores are not necessarily predictive of low absenteeism. The overall JCP score did not support the correlation found for the Dependability dimension however, as a cumulative score, it is less sensitive to any one dimension. No significant correlations were found between JCP scores and attendance for the varying age cohorts even though the coefficients fell within the moderate range. This is likely a function of the reduced sample size used in the age cohort analysis and future research with a larger sample may reveal a relationship between age, JCP score, and attendance.

The comparison of means for assessment scores and retention show that Work Keys Reading and Math scores for those subjects who are no longer employed did not differ greatly from the scores of the subjects who remain employed. The JCP scores however appear to be generally lower for those subjects who remain employed. This may be similar to what seems to be occurring with Dependability scores and attendance in that higher JCP percentile scores are not necessarily predictive of retention given the attendant job functions and work environment.

The correlation of Work Keys Reading and Work Keys Math scores to hard skills performance was inconsequential. The authors have reason to believe that there exists some relationship however suspect that the sample sizes were too small to detect a correlation. Analysis of the independent variables safety and people relations was not possible therefore no conclusions can be drawn.

Summary

The information obtained through the pilot study is less important statistically than it is practically. While only one significant finding resulted, the data seems to indicate that continued use of the assessment instruments be accompanied by attention to score interpretation and application. It seems that while the instruments may indeed exhibit internal validity, generalized usage of the instruments must consider the organizational environment. Higher scores may suggest stronger skills or characteristics, but the match between the skills and characteristics to the specific job and organizational culture is also important. A certain range of scores, not necessarily the highest scores, may be most predictive given a specific organizational application.

The challenge presented is to continue research with larger samples. Future analysis can further determine what, if any, relationships exist between pre-hire test scores and employee success. Continued research can also reveal what ranges of pre-hire scores are most predictive given the organizational context.

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A Critical HRD Issue: A Legally Defensible Job Analysis Using atCODAP

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Job analysis is a two fold analytic process investigating the internal composition of a job, and interrelations of the job to the organization. For the present study, automated self-report surveys were generated supplying the data used during a job analysis. Case law was searched to determine court established guidelines. These guidelines in concert with atCODAP's professional practices are described to help ensure compliance with Federal law.

Occupational research provides human resource development (HRD) practitioners systematic information about individual behaviors in work environments, the nature of work performed, and the knowledge, skills and abilities (KSAs) required to perform a specific job. A number of alternative research strategies have been developed to collect and analyze these data (Levine, 1983). The purpose of this paper is threefold. First, we will describe the background and history of job analysis leading up to the development of CODAP. The second section will describe the process we followed in conducting a job analysis using atCODAP. Finally, we will demonstrate CODAP's compliance with federal court guidelines. These guidelines establish standards of quality and fairness of practitioner's research strategies used to collect, analyze, describe, and evaluate work behaviors.

Background

Gagne (1962) encourages job analysts to define, evaluate, and modify the organizational interfaces between the employee and organization by analyzing job specific information. This idea is not new, for job analysis artifacts can be traced back to Socrates (Primoff & Fine, 1988) in 5 BC and ancient China (Mitchell, 1988) in 1115 BC.

The first and second world wars stimulated the need for occupational analysis. The inventory method of job analysis was created during this time to place and train America's military officers and enlisted personnel. The results stimulated interest in selected human resource areas such as: personnel classification, career laddering, and job applicant placements. Rapid expansion of these areas caused alternative methods of job analysis to be created.

During World War I, Munsterberg, Scott, and Bingham headed a Committee on Classification for the U. S. Army. That committee recommended a general classification system be developed to classify jobs (Mitchell, 1988). In retrospect, these job analysis strategies were cumbersome if not crude. The jobs were not rigidly defined. Therefore, if a soldier was successful, he would remain on the job. If not, he would be transferred to another unit. Basically, soldiers learned the required knowledge, skills, and abilities (KSAs) to do their assigned job by interacting with skilled supervisors and other soldiers (Berger & Hawkins, 1979).

Job analysis strategies developed rapidly during World War II (W.W.II), especially where the application and evaluation of human factors were important. During this period, the critical incident technique emerged as part of the U. S. Army Air Force's pilot selection program. This program and the engineering approach to job analysis by the War Department and the U. S. Navy contributed significantly to America's victory in W.W.II (Mitchell, 1988).

Following W.W.II, the Joint Chiefs of Staff requested that the Department of Defense initiate a study to find the most appropriate methodologies of job analysis and evaluation. During the next 30 years all branches of America's military participated in the development of these job analysis strategies. The

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resulting process was a computer-facilitated, inventories-based job analysis strategy called the task inventory/comprehensive occupational data analysis programs (TI/CODAP) (Mitchell, 1988). This system was favorably received for it overcame the disadvantages of the traditional system of observations and interviews. In addition, it was more economical because it provided broader coverage, allowing better data collection coverage, and representativeness of job incumbents (Berger & Hawkins, 1979). During the 1980s, Sensible Systems, Inc. introduced a personal computer version of TI/CODAP called atCODAP. The attached to (at) version of CODAP is more economical and flexible than the original main frame system.

atCODAP is an interactive set of computer programs that provide the job analyst with tremendous statistical flexibility in conducting occupational research. Its flexibility has contributed to the number of inventories and scales used to systematically collect data from all job incumbents within organizations who employ less than 2,000 employees. Thus, the data is easily quantified whatever the number of employees. The assembled inventories go in a data collection instrument called an "automated self-report survey." Each survey is copied onto an MSDOS formatted disk for use in any MSDOS personal computer platform.

Ghorpade (1988) says that inventory-based job analysis strategies are popular for they take stock in people, goods, and job assisting tools and resources. Such inventories are highly structured surveys which include these areas: background information; job-related tasks; equipment used; forms and reports used; physical abilities; and essential knowledge, skills, and abilities. The primary concern for all inventories is to find out if the identified factor is a part of or absent from job performance. Thus, each inventory contains information needed by the employer to improve employee and organizational performance.

Automated Self-Report Survey atCODAP

The automated, self-report survey atCODAP uses a seven step strategy yielding content valid job descriptions. The first four steps of the job analysis process represent the identification and refinement of instrument content, and the data collection process. The remaining three steps will be discussed in the data analysis section. The results also provide a starting point for the client to conduct other analyses that yield job applicant selection processes and instruments. In addition, the process established a starting point for additional analyses to decide the content of recruit level job-related training programs.

Research Question and Methodology An evaluation was conducted to interpret or evaluate the data collection and analysis process according to criteria established through an examination of case law. The purpose of which was to determine the likelihood of conducting a legally defensible job analysis through the use of one particular job analysis strategy, atCODAP. There are two phases to the research problem. During the first phase the problem was to determine what, if any, legal criteria or guidelines existed for the job analysis process. A content analysis was conducted of Federal case law to determine if any and what guidelines have been defined by litigation. The second phase is a case study of the job analysis process conducted according to the criteria uncovered by the content analysis of Federal case law.

A secondary purpose of this evaluative study was to conduct a job analysis of a small township police agency in a midwestern state. The data was collected to answer these questions: What is a comprehensive description of each job? What are the essential KSAs associated with each job title? What concerns should the agency consider before recruiting and selecting its next group of officers?

This design strategy generated a content valid survey instrument. Validity (Fraenkel & Wallen, 1993) refers to appropriateness, meaningfulness and usefulness of the specific inferences that research teams can make and disseminate from the data collected. The instrument was developed through a multi-stage process. Four different panels of subject matter experts customized the survey instrument and its related inventories. Data gathered from the panels assisted the research team in determining the content, comprehensiveness, and representativeness of the organization and jobs; and the format of each inventory. An inter-rater reliability was calculated on the data generated by panel. The final instrument's correlation was .96 with and 88 percent average level of agreement on all items. No item had less than an 80% agreement nor a correlation coefficient of less than .92.

A purposive sample identified those employees who were not on probation and who had been employed by this agency for at least 12 consecutive months to participate in the study. A one-shot case study design was used to collect data from the employees. This nonprobability sampling technique allows the research team to discover descriptive data reflecting a 12 month period for each job. The univariate data gathered yielded a correlation coefficient of .98 for this sample.

Skills Bank Development Initial inventories were developed and content validated through three primary components. The content of these inventories were the results of a synthesis of three TI/CODAP related inventories, law enforcement inventories obtained from the Vocational Instructional Materials Laboratory at The Ohio State University, and other reference materials obtained from regional law enforcement agencies. The result of this effort produced eight different inventories containing between 15 and 946 items representing physical fitness activities and physical job performances, job performance tasks, KSAs, equipment, forms and reports, sources of information and training subjects.

These inventories were submitted to 13 SMEs from law enforcement agencies of comparable size within the same state. These professionals represented a diverse gender and ethnic minority mix across job positions. The SMEs rated each of the inventory items with an 89% level of agreement achieved across the inventories. This step reduced the number of items on the inventories from the previous 15 to 946 down to a range of 13 to 859.

Client Customization The client randomly selected two different panels of job incumbents. The panels represented 38% of the client's job incumbents, and were gender and job inclusive. The two-step process yielded a 97% level of agreement among job incumbents. These employees customized the content of the skill bank inventories. Each job incumbent was asked to edit each inventory to reflect job assignments that anyone within their department might be expected to perform. They were also instructed to include tax payer and employer expectations of job performance. The editing process allowed for deletions, additions and modifications of listed items.

During the second step of the customization process, the chief officer was presented a background inventory designed to collect different demographic and job-related data not included in the other inventories. These data were combined with the entry-level KSA data, and reduced to the essential job functions within the job descriptions.

Pilot test. A paper-pencil prototype survey instrument was constructed to pilot test survey content to identify areas where respondents had difficulty. A fourth panel of six randomly selected individuals participated in the process. The panel represented three HRD students who had knowledge of job analysis instrument development, and three job incumbents gender and job inclusive from comparably sized departments. The average self-administration time for this pilot test was 3.0 hours.

The paper-pencil instrument was revised and reformatted for use on a MSDOS platform having a 3.0 DOS or higher. The automated self-report survey contained 21 categories of questions. These data categories covered background, task-related, job-related, and essential entry-level KSA information. Data were collected on frequency of use for each inventory in the job-related and task-related categories. The KSA category asked respondents to rate the criticality of the KSAs required of new hires.

Administration of atCODAP Two one-hour employee training programs (averaging 41 minutes) were conducted to prepare employees to use the automated self-report surveys. Each training session walked the participants through a demonstration version of the data collection process. Employees were encouraged to ask questions about the data collection instrument and process including the product, a reduction to a generic job-title description.

An administrator, employed in another unit of the local government, coordinated survey distribution, data collection, and survey return processes. She was given 30 MSDOS self-report survey diskettes to distribute. Of the 30 original surveys, 24 were distributed, 23 were returned and 21 contained useable information. The average completion time was 3.2 hours. Following the completion of each list under each category, respondents were asked to certify the survey was completed without being influenced by an immediate supervisor, interested third party, or another employee. This is an important professional practice to identify survey instruments containing bias.

Data Analysis and Findings Each section of the self-report survey was statistically analyzed. Central tendency information was calculated for each item of the background sections. Task data was analyzed three ways: the percent of job incumbents doing each task, the relative time spent performing the task during the past 12 months and its relative importance to the job. The main data set identified the percent of job incumbents rating the task, its mean value, standard deviation, and cumulative percent. Data collected during a job analysis technique can uncover problems or potential areas of concern to an

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organization other than inadequate or incorrect job descriptions. Next is a discussion of several areas of concern the atCODAP analysis detected.

Skill Utilization and Job Satisfaction Concerns Thirty-three percent of the employees have completed an associate degree or higher. A majority (57%) of the employees exercise regularly. Less than half (48%) of the respondents found their jobs interesting. A majority (62%) reported their job required use of their acquired KSAs, while 23 percent indicated their job did not require use of their education and training. Two employees suggested they plan to leave the department within the next five years. The data suggests this area needs further study to identify the real or perceived problems within the organization.

Redistribution of Supervisors. Of the employees 10% are dissatisfied with the quality of their relationship with their immediate supervisor. The majority (72%) reported receiving 15 minutes or less of direct supervision per shift. Sixty-seven percent noted receiving less than 15 minutes of indirect supervision per shift. Furthermore, 30 percent stated that without participation or assistance of a supervisor they made critical decisions one or more times a week. Some shifts lacked an assigned supervisor. This problem could be rectified by employing an additional sergeant or by redistributing the existing officers.

Diversity Concerns. Sixty-six percent are proficient in English only. However, 14 percent encounter a foreign language and 5% use the services of an interpreter less than once a month. This organization needs to monitor this characteristic of their community, because locally gathered data suggests this feature of their community could change over the next five years. The organization was not gender balanced nor racially mixed. Three percent of all employees are female. All employees are white.

Literacy. Fifty-four percent of the employees read general law enforcement materials weekly. A majority (68%) read the Ohio Revised Code one or more times a week. Fifty-three percent of the employees read case law one or more times a month. Respondents believe the ability to read these items is very important to the actual job performance.

Physical Characteristics. All employees spend three or more hours each day behind a desk or steering wheel. Thirty-nine percent said their work environment was restrictive. Therefore, it is important to purchase vehicles with ergonomically designed interiors. It is also important for the department to monitor body composition (fat) as part of their physical fitness program to reduce the need for purchasing vehicles to make obese people more comfortable.

A majority (62%) secure dangerous environments less than once a month. However, 34 percent point out their job requires them to work in a dangerous environment at least once a month. The lack of experience caused by infrequent work in dangerous environments and confined spaces increases the level of danger and the potential for personal injury. To reduce these effects, a physical and mental conditioning program should be included as part of the department's physical fitness program.

Job Descriptions. Due to the low number of cases within each job title, and the diversity of the responses, task clustering and job responsibility typing were inconclusive due to the amount of task performance overlap between the job titles. These data will generate job descriptions that are very speculative. The data suggests two job titles represent "jacks of all trades to masters of nothing." These job titles need to be carefully reviewed, while reducing the scope of the job responsibilities. In addition, one job title could not be supported due to the lack of tasks performed, and the amount of time spent doing insignificant tasks.

The data gathered during this job analysis process were reduced to five job descriptions. Each job description was unique, however its format was similar. Each section of the job description represents a synthesis of selected job analysis data. The descriptive statement provides a general set of job performance expectations for the incumbent doing this job. This part of the job description presents a description of what the job title is based on, when the incumbent's behavior is influenced by the job description, the scope of job responsibility, and the amount of interaction with co-employees and the public.

The job responsibility section provides a summative description of the job title. The description highlights reporting relationships, sample job responsibilities, expected employee interactions, and the job incumbent's need to help in and fulfill the organization's mission and business plan.

The KSA section reflects a reduction of the essential KSAs and their relative importance to a list of items that can be used to screen job applicants. The list is not all inclusive. Instead, it represents only those items deemed necessary for entry--level employment. The list can also be used to maintain minimum levels of employee competence and ability during his/her tenure with the organization. Frequency of use data was gathered on the job incumbent's use of equipment, forms and reports, and sources of information.

In addition, essential KSAs and their respective relative criticality data were gathered. The number of job incumbents in certain job titles were insufficient to meet the mathematical requirement of the statisitical process used. The job title is sensitive making misinterpretation easy therefore these data were not analyzed for the organization. However, the KSA data was analyzed for each job title to comply with Americans with Disabilities Act (42 U. S. C. 2000) FJR guidelines (29 CFR 1607).

The competency narrative section represents a reduction of all job analysis data to a description of general competence, immediate supervision by, scope of situations in which the job is done, performance expectations, and if role model behavior is expected. The self-initiative narrative supports the competency narrative by describing those job responsibilities where the incumbent is expected to self-initiate a job performance within specified organizational guidelines.

The work environment narrative reflects a summative description of the conditions under which the employee executes his/her job responsibilities. It highlights the restrictive nature of the job, and the incumbent's need to be physically fit and agile. The appraisal of job performance presents a summative description of the employer's job performance expectations. In addition, this narrative is tied to the department's progressive discipline system.

Actual job descriptions contain a representative list of tasks performed. Good professional practices suggest lists of tasks performed, important physical activities, and essential KSAs be attached to the job description presented to each job incumbent or for each job position posting.

Court Established Guidelines

Federal courts nor the Uniform Guidelines (29 CFR 1607; 29 CFR 1630) express any preference for one job analysis process over another, since the data reflects actual job performance. A review of case law literature yielded insights into federal court reviews of the human resource development (HRD) process of job analysis. A search of Shephard's Citations was conducted to ensure cases used have not been overruled or reversed, therefore still setting precedent. The literature reviewed identified three categories of findings: non existent, inadequate, and adequate. The cases will be discussed in these categories with reference to atCODAP's inclusion of particular guidelines within its job analysis procedures.

Griggs v. Duke (401 US 424) established the legal need for using job analysis processes that involve employee- and job applicant-related decisions. Each court judges the appropriateness of the job analysis process for its degree of inclusion of four qualities. The four job analysis process qualities include completeness, fairness, representatives, and validity. Federal Court precedence has established the importance of these qualities in employer decision making processes.

Non Existent Federal courts ruled in favor of the plaintiff in cases where the job analysis process was non existent: Rowe v. General Motors (4 FEP 445), Brito v. Zia (5 FEP 1203), Fowler v. Schwarzwalder (5 FEP 273), United States v. City of Chicago (14 FEP 1882), and Watkins v. Scott Paper (12 FEP 1415).

Inadequate Following is a discussion of cases where a federal court judged the job analysis process as inadequate (4 FEP 596, 10 FEP 1181, 10 FEP 404, 12 FEP 1041, 21 FEP 1286, 34 FEP 380, and 39 FEP 1142). The first case to investigate the details of a job analysis process was Kirkland v. Department of Correctional Services (7 FEP 695). Kirkland set the stage for later cases to probe further into the job analysis processes and related professional practices by specifying that products derived from incomplete or inconsistent job analyses could not be content valid.

Employers who used job analysis processes that were cursory (3 FEP 673, 5 FEP 1229, and 12 FEP 265) or that lacked sufficient subject matter expert (SME) representation (3 FEP 673, 12 FEP 265, 42 FEP 1975) were violating Title VII of the 1964 Civil Rights Act (42 U. S. C. 2000).

Other employers used job analysis processes that did not follow appropriate professional practices (21 FEP 1286, 39 FEP 1142, and 43 FEP 305). Some of these processes did not represent the full range of tasks done by the job incumbent (12 FEP 265, 21 FEP 1286, and 42 FEP 1795). Thus, their results were incomplete. Furthermore, some lacked adequate job analysis process documentation (39 FEP 1142 and 42 FEP 1723). Others were viewed as biased and unfair (43 FEP 305). These employers also violated Title VII.

The above cases also provide important insights by the court regarding job analysis. Judge Weinfeld (5 FEP 1236) described job analysis as the beginning point for any employee related decision. In addition, he viewed the job analysis process as a thorough survey of the relative importance of the various skills related to the job in question, and the competencies required to perform each skill. He further said that a job analysis is conducted by interviewing job incumbents, supervisors, and administrators; consulting training manuals; and by closely observing actual job incumbent performances.

Judge Lasker's (Jones v. Human Resources 12 FEP 264) summary described job analysis as a series of operations and discussions by which the analyst identifies what people do and why. He also says that a job analysis is of primary importance to reach any decision regarding job relatedness (7 FEP 703). Furthermore, job analyses involve the isolation of qualities most critical to the job's performance.

Adequate The last category reviewed describes job analysis processes judged as adequate in meeting the intent of Title VII (5 FEP 293, 12 FEP 1415, 13 FEP 533, 14 FEP 1486, 16 FEP 486, 24 FEP 1105, 47 FEP 1723, and 54 FEP 1161). In contrast to the cases previously identified, the courts described in detail why the job analysis process was adequate. The U. S. Court of Appeals established an important precedent for job analysis procedures in its decision related to Guardians Assn. of New York City v. Civil Service (23 FEP 909). The court included a detailed description of a five step job analysis process.

During the first step, a panel composed of 49 job incumbents and 49 supervisors identified 71 job related tasks. Next the initial inventory was revised by a second panel of seven internal job incumbents and supervisors (SMEs). During the third step a questionnaire to gather information on 42 tasks was developed and distributed to the 5,600 job incumbents and supervisors not previously included on either panel. Respondents were asked to identify if the task was performed, the importance of the task, and the amount of time spent performing each task. A 46 percent return was received.

During the fourth step tasks were grouped into clusters by a third panel of internal job incumbents and supervisors. The tasks were divided into five clusters. Identification and assignment of KSAs for each task cluster of tasks by a fourth panel of employees was conducted during the final step. This panel identified the KSAs related to entry level job performances and their respective levels of importance.

Guardians Assn. of New York City v. Civil Service (23 FEP 909) reflects an important professional practice contained within the atCODAP methodology. atCODAP surveys are an efficient and economical means to survey all job incumbents in positions under investigation when there are less than 2,000 incumbents employed in the job position. atCODAP's methodology encourages organizations with populations less that 2000 to survey all incumbents. The results of the statistical analysis, task clustering, and case clustering processes allow more reliable inferences to be determined from the data. Thus, recommendations can be better made from fact rather than from speculation.

In another case, the Ninth Circuit of the U. S. Court of Appeals described an acceptable job analysis process (25 FEP 866). The City of Los Angeles conducted four meetings with many job incumbents and supervisors. Their job analysis process used SMEs to compile a list of tasks performed and to identify the KSAs necessary to perform an identified job. A statistical process was used to rank the importance of each task. Finally, each critical element was weighted to find its relative importance.

This case reflects an important professional practice used in occupational analysis. The practice identifies the "relative" nature of the task in question. The "relative" process begins with the question asked about each task, and a statistical ranking process that compares one task to all other tasks performed. atCODAP methodology asks the respondent to identify all tasks performed. The automated survey instrument isolates only those tasks performed by the job incumbent. The next question asked in the survey is "How frequently do you perform this task in comparison to all other tasks performed?" atCODAP's data analysis process generates a relative frequency of performance scale for all tasks performed. This data allows the job analyst to time-rate each task performed.

In 1990, the Sixth Circuit of the U. S. court of Appeals accepted the City of Cleveland's (53 FEP 72) six purposes of the job analysis process. Dr. Henderson prepared the job analysis to:

1. Establish a list of tasks required of entry-level job incumbents.
2. Determine the frequency of task performance and its importance to acceptable job performance.
3. Group tasks into broad job dimensions.
4. Assess the KSAs required for entry-level job incumbents with respect to the above tasks.

5. Determine the general KSAs required for entry-level job incumbents with respect to the above tasks.

6. Identify and define abilities and skills to be tested based upon the above data.

The courts have established a set of professional practices delineating basic job analysis characteristics that must be addressed to survive legal scrutiny. Although the courts nor the law prescribes one job analysis strategy over another, it can be assumed that the job analysis procedure should be job content-based.

In another case (506 F. Sup. 528), a 1981 U. S. District Court for the mid Florida, Jacksonville Division, accepted this job analysis process. First, a interracial test development committee was established from job incumbents. This differs from Guardians Assn. of New York City v. Civil Service (23 FEP 909) whose first step involved a panel composed of supervisors and job incumbents with out mention of attention to diversity. The second step here was to identify the essential work behaviors performed by job incumbents. Committee members defined the criticality of each work behavior as the third step. The criticality of each work behavior was determined by frequency of job incumbent performance, time spent performing the job behavior, and the importance of the job behavior to the general job performance. Fourth, specific tasks were identified for each work behavior. The committee then operationally defined each task, assessing it for its importance to the general work behavior, and identified the KSAs required to do this task successfully. As the final step the committee weighted the importance of each KSA relative to successful job performance developing paper-pencil test items from the data generated from the preceding steps.

The first and most important legal guideline is a job analysis must be conducted. The next guideline is the data collected must reflect a variety of data collection processes, involve a representative sample of job incumbents and their immediate supervisors, and move through various refinement and validation processes. Third, the job analysis process should be conducted by an expert. In addition, it must be content valid, fair, and representative of the knowledge, skills, and abilities required to perform the job without violating an employee's or job applicant's Constitutional rights. Furthermore, the process must be carefully documented, and the results reduced to a job description.

The data collection tool(s) must identify tasks as a prerequisite for an acceptable job analysis. The tasks need to be stated in a clear, concise, and consistent manner. Data relating to tasks must be evaluated in terms of their "relative" frequency and importance. Essential job functions (EJFs) are identified from a validated list of knowledge, skills, and abilities (KSAs) required for an employee or a job applicant to enter said job position. It is equally important that the list of EJFs contain only those KSAs essential for entry into the job position.

Levine's research rates the CODAP process as the best job analysis process to address legal and quasi legal requirements. He also gives it an outstanding evaluation for producing job descriptions, classifications, designs, and related training. The process also received high evaluations for its versatility, standardization, readiness reliability and quality of outputs. Sage and Rinado's (1992) evaluation of atCODAP produced results similar to those identified by Levine (1983). The major difference was the cost of implementing and the amount of training required to develop and use atCODAP. In their study atCODAP shared the highest ratings with DACUM.

Summary

This piece of occupational research was conducted for a small organization that is evolving into a finely tuned mid-sized organization. The results of this job analysis process provided information to improve the organization's structure and its development, employee development, and career development strategies. By rectifying the organizational and job title deficiencies identified during this investigation, the organization's quality and efficiency of services rendered to its clients should improve.

atCODAP is an economically efficient strategy which can be used in a variety of organizational settings to address legal and quasi legal requirements while reducing the potential for litigation. In addition, this research methodology attempted to address all issues identified in precedent federal court cases and guidelines. The practitioner must have an understanding of atCODAP, TI CODAP, survey research methodologies and EEO guidelines before undertaking any job analysis project.

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Meaning Construction and Personal Transformation: Alternative Dimensions of Job Loss

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This study was conducted to explore the ways individuals reconstruct their job loss experiences over time and how this construction manifests itself in terms of self-knowledge and change. Findings reveal the paradoxical nature of making meaning of significant life changes, and make problematic the technical-rational interventions prevalent in today's termination practices and unemployment counseling. Contributing to a growing exploration of personal transformation and work, this study reframes the experience of job loss in terms of opportunities for fundamental change and transformation.

The social, political, and economic turbulence pervasive in the 1980s and '90s has stimulated new demands and expectations within the workplace. Increasingly, organizations are implementing innovative changes and redesign in an effort to meet complex market and human resource demands. Few of us today have remained untouched by the repercussions of such changes, most notably of which may be the overwhelming occurrence of involuntary job loss. Companies can no longer afford to retain the marginal employee. Re-training is not always a viable option. Mergers, acquisitions, and the need to downsize send tens of thousands of people annually "out the door." Within many HRD departments, the discharge process is viewed as over once the exit interview is complete, severance arranged, and the desk cleaned out. My work in outplacement, however, has led me to observe that for the person undergoing the job loss, the discharge is simply the beginning of a dynamic and extraordinary learning experience.

The social and economic ramifications of job loss are well-publicized and disturbing, particularly when viewed from a context of indirect effect where the consequences of job loss have been estimated to reach roughly 20% of the U.S. population -- 50 million people (Steinweg, 1990). While the social and economic consequences of job loss are extensive and well documented, it is the potential personal, human cost that is perhaps most staggering. Job loss has been explored within many disciplines including psychology, sociology, and the broadening arena of employment counseling. As a life event, job loss frequently leaves a person confused, devastated, with little effective means to cope with the experience (see for example Kieselbach & Lunser, 1990; Winegardner, Simonetti, & Nykodyn, 1984). Research provides a link between unemployment and a wide array of psychological and physiological disorders including depression, chemical dependency, psychosomatic illness, family abuse, and suicide (Kieselbach & Lunser, 1990; Steinweg, 1990).

In their review of current literature, Palmer-Spilker and Reed (1993) identified a growing body of literature dedicated to describing and understanding job loss from perspectives of job loss situation/condition, consequences, and solutions/responses. A further review of literature reveals a focus on identifying characteristics of the unemployed (Amundson & Borgen, 1982; Kieselbach & Lunser, 1990; Merriam, 1987; Winegardner, et al, 1988), models for termination practices (Cope, 1991; Deems, 1989; Gordon, 1985), prescriptions for instrumental support and assistance to the job loss survivor (Amundson & Borgen, 1987; Kieselbach & Lunser, 1990), and suggestions for successful behavioral strategies to cope with this life event (McKnight, 1991; Runde, 1982). Still other research depicts the growth potential within this life event, citing such outcomes as increased self-knowledge and greater satisfaction with new career situations (for example Deems, 1989; DeRoche & McDougall, 1984; Latack & Dozier, 1986).

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While such work has been vital in positively impacting termination practice and the struggle to assist the unemployed, little has been done in terms of understanding how the displaced person makes the transition from job loss to new, satisfying employment and life situation (Palmer-Spilker & Reed, 1993), or the processes that bring about such fundamentally different orientations to the job loss experience.

This study was undertaken to investigate how people make sense of their job loss experience and the experiences of change and personal development within this context. Central to this process is the reconstruction of meaning in one's life and the reconnecting of experience to new life situations. Transformation theory attempts to understand the meaning-making process, and it is through this lens that the study was interpreted.

Research Inquiry

This inquiry sought to explore how individuals reconstruct their job loss experiences, the process of meaning-making within this context, and how this construction manifests itself in terms of personal change. A multiple-case study was undertaken utilizing a qualitative design based on Lincoln and Guba's (1985) paradigm of naturalistic inquiry. Potential study participants were identified through invitations presented to a mid-west chapter of the American Society for Training and Development and a job loss support group for professionals. Purposive sampling resulted in six participants, men and women, with an age range of 25 to 55 years. Additional characteristics included:

- industries of communication, manufacturing, agriculture, health and education
- participants held positions of responsibility in discharge position
- discharge occurred as a result of performance and external/uncontrolled circumstances
- position tenure ranging from 6 months to 20 years
- low, intermediate and high levels of satisfaction gained from discharge position
- current work situations of unemployed, "survival" employment, and "satisfied" in new employment situation
- time since discharge from 3 months to 11 years

Data were collected through semi-structured, open-ended interviews, follow-up interviews, observation, and secondary sources. Due to the potentially sensitive nature of participant disclosures and the need to develop a trusting relationship with participants, data were collected using field notes rather than electronic devices. Field notes underwent extensive write-ups immediately following each interview, and follow-up conversations were held with participants to verify information collected. Following the initial interview, inductive analysis was used to create an initial coding scheme which included how participants described the initial discharge experience, actions and coping behaviors over time, emotional "stages," ways of changing, and concurrent life events. The coding scheme was revised and refined by on-going analysis following each successive data collection point. Data was also collected through observation of a support group for unemployed professionals, involving six meetings during a 6-month period. Ultimately, three analysis categories emerged: meaning attributes, processes used to construct meaning, and the nature of knowledge acquired. To ensure trustworthiness, member checks and peer reviews were used to corroborate information, verify meaning, and negotiate outcomes.

Presentation of Findings

Regardless of their specific discharge contexts, participants presented their experiences in a loosely structured chronology of stages or phases, including what they experienced immediately following the discharge announcement, how they viewed their overall experience at the time of the interview, and their experiences and responses in between these two points in time. Overall, the experience was described as an "interruption" that was both traumatic and transformative, characterized by recurring periods of disorientation, emotional turmoil, unanticipated life changes, internal conflict concerning roles, perceptions of self, and relationships with others, and behavioral strategies used to "move beyond being fired." Evident in these accounts is movement from a self-protective orientation through a complex struggle to rebuild or enhance a sense of self, connectedness with others, and personal competence. Embedded in these struggles, participants described learning, self-knowledge and change as central components of their experiences.

For some, the job loss precipitated divorce, a restructuring of social relationships, or a redefining of financial goals. For others there were increased thoughts of morbidity or suicide. Of greatest impact, however, were the emotional ramifications. One participant describes his experience in a way echoed by the others:

> It really is a lot like death, yet it's not quite the same. I have flashes. Anger hits, then backs off. Stages seem to run together, overlap. It's scary. Self-confidence shaking. I'm anger-driven, bitter. It's also embarrassing. And frustrating. There's self-pity and depression. I have a sense that something has happened to me, but I'm not real clear on exactly what has changed.

"Up's and down's" characterized the days, weeks or months following the discharge, accompanied by a sometimes daily struggle to remain active rather than reactive or withdrawn. For some, this struggle was evidenced by a significant increase in sleep, in the amounts of alcohol consumed, or "a new need to make 'to do' lists, I think just to show myself there really was something to get up for each day." For one participant,

> I had to fight, every day, to get past the depression. I had a real sense of worthlessness. I had to force myself to make calls. I painted the house. There was a lot of frantic activity that I think was to make up for not working. It made me feel like I was still contributing to my family. And it helped me avoid meeting and talking with people.

Regardless of the circumstances surrounding the discharge, participants noted a marked hesitancy in decision-making and ability to take effective action, and a corresponding questioning of themselves and of their relationships with family and friends. Participants also chronicled an indeterminate period of self-reflection where life direction was "reassessed," where old roles and self-images were shed and a new "sense of place" in the world was perceived. One participant recounted,

> One day I saw a group of people outside the unemployment office. My first thought was, if they really wanted a job they'd get one. That's how I always used to think, I've always been a little self-righteous. Then it hit me: that's me standing there! Somehow, that changed the whole way I viewed myself and others. I think I have more empathy now. It's easier for me to see other people's perspectives.

Central to their struggle to make meaning of their job loss was grief work, a sense of loss, pain, and confusion that was described as being "unjustified" by the simple loss of a job position. One participant described the experience as "kind of like death. It was very significant. I lost an identity." Another described a sense of "not being in the world." The stories were filled with failed attempts at industry and an inability to sustain constructive activity, an encroaching apathy and depression. This period was additionally characterized by reflective questioning: Where do I go from here? Where do I want to be? Of what value am I? What is important to me? Grief work and confusion appeared regardless of length of unemployment or other variables considered; one respondent, unemployed for only two weeks and describing herself as "very satisfied" with her current employment situation, stated that the "spiral" of emotions continued for several months.

The job loss experience continued to impact participants long after a new and satisfying career position had been obtained. Participants describing themselves as "happy and content" also described an underriding fear of the job loss occurring again and a general lack of security. Though all participants described significant growth, positive changes they had made in themselves or their life situation, stronger relationships and increased self-knowledge that they tied to their experience of job loss, they also described episodes or "flashbacks" of anger or depression, self-doubt and lack of trust even several years after their discharge. The memory of the emotional intensity of the job loss experience also remains: "Even after eleven years, now, when I think back on that time, I can feel the numbness. It all comes right back and it's like I'm right there again."

In spite of the turmoil and uncertainty, without exception the job loss was perceived as "a real learning experience," a time of growth, personal exploration, and decision-making. Participants focused their descriptions on incidental learning experiences and the impact this learning has had on their lives. Often this was described as "I wouldn't know what I do today, if that hadn't of happened," or "I wouldn't be who I am now, without that experience." For each respondent, the drive to make sense of their experience was hampered by recurring periods of disorientation, depression, withdrawal and isolation, self-pity, anger, and a desire to "lick my wounds." Other factors included confused perceptions of themselves as workers, a sense of betrayal by their employer, anger and/or disbelief concerning the manner in which the discharge had been carried out, and a disorienting loss of identity connected to their social and personal roles. The negative impact, however, lessened as people were increasingly able to see the personal opportunities within the experience.

Each participant engaged in formal and/or informal learning activities including self-directed learning projects, job search education and support groups, retraining as the result of a survival job, a return to higher education, and participation in career counseling. Reasons for participation were often instrumental in nature, as in retraining or to improve job search skills. However, the primary reason given for learning engagement was to "help me cope" and "help me make sense of what had happened," a way to position themselves in relation to their experience. Though the instrumental needs were the driving force to participate, it was clearly not this aspect on which they focused. Rather, the dimensions of personal change and new perspectives of themselves and others were emphasized and highlighted as outcomes. Such an orientation was aptly described by one participant, discharged from a position as Chief Executive Officer, as he described his decision to train for a survival job:

> Though my severance was good, I decided to train for a telemarketing position. See, this would extend my savings and give me the opportunity to explore myself, and what I want, further. At first, I thought, gee, what a step down. But it's helped me to stop defining myself by what I do, and learn to define myself by who I am.

For each participant, this increasingly inward orientation brought about redefinition's of self in relationship with others, an examination of personal values, dreams, and goals, and an often intense exploration of the very foundations of their sense of self-worth, image, and identity.

Ultimately, there occurred "a turning point," "a release," or "sense of relief that I was being propelled to take action that I hadn't been able to take before." With this point of recognition came a reaffirmation or renewal of their sense of self that occurred apart from their acceptance of a new position. For some this came quickly, for others more slowly. The knowledge generated through self-reflection and new constructions of meaning was enhanced by interpersonal experiences, and "support of others" was named as a critical element of this development. Reconstruction of the meaning of the job loss moved participants from seeing the job loss as similar to death to describing their experience as "the best thing that every happened; I wouldn't be who I am today if not for that." In spite of the depth of the personal struggles embedded within the job loss experience, the overwhelming meaning attached to the experience was one of necessary growth. "It was a time for change . . . I had things to learn."

Discussion and Implications

How is it we can understand the nature of the job loss and the ways in which we make meaning of the experience? In spite of differences in job loss contexts, participants presented a surprisingly invariant structure of experience. Job loss was characterized by fragmentation, a sense of separation or alienation from others, periods of reflection and self-examination, and the emergence of new perspectives concerning their views of self and of others, in a context of unanticipated and recursive emotionality. Participants presented a strong need to reconstruct their experience in ways that gave practical application to their experience and helped them to create new meaning, direction, and insight into their lives. Clearly, the experience of job loss can be debilitating and full of negative consequences or foster growth, empowerment, and personal transformation. Very often, it seems to encompass both extremes in a paradox of meaning that is both confusing and exhilarating for the individual.

The construction of meaning and the emergence of new perspectives within the experience of job loss were phase-like and paradoxical, occurring within a psychosocial context. While initial experiences were primarily described as shock, anger, or the need to attach blame, these individuals reconstructed their experience in a manner which provided them with a more useful degree of control and mastery over their lives. Evidence from their stories suggests that it was not the fact of unemployment that was the central disorienting experience providing momentum for change, but rather the recognition that one's way of seeing themselves in the world was no longer valid or useful. Stimulated by the job loss, participants' previous, predictable ways of interpreting reality and of making meaning of themselves in the world collapsed. In their movement from an attitude of "this is devastating" to "it's the best thing that's ever happened to me," people described a shift in their meaning perspectives as they moved from an external focus to a more consciously internal orientation and acceptance of personal responsibility for their choices and direction. Such a transformation may be a critical component of making effective exit transitions and reintegrating to new work life in a fully satisfying, fully productive way.

This shift in external/internal orientation appears to be a key theme in the process of reconstructing meaning of the job loss experience. Participants met with increasing frustration and confusion as they attempted to apply their old ways of being with this new life situation. Without notice, their work ethics appeared invalid, their social and family roles were called into question, and the previously established sense of self was now shaded in doubt. For each study participant, to a greater or lesser degree, their personal sense of identity was closely tied to their careers, to their relationships with co-workers, and to their perceived role within family and community. When this was taken from them, they were confronted with questions of who they were, where their sense of worth and value lay, and what direction they wished their lives to take. It is possible that much of the "frantic activity' described came about as a result of attempting to answer such questions, a desperateness for meaning and frustration in their inability to more quickly create a new sense of "place." As their efforts to attach their identity and sense of self to a new external condition were increasingly ineffective, they began to turn inwardly and base their sense of self on alternate sources of meaning. Such a process of reconstruction of meaning and of patterns of being seems to occur both consciously and unconsciously, within a psychosocial and emotionally charged context. The loss of a job, for these individuals, sparked not only a rational dilemma to be addressed but also provided a doorway for a more conscious awareness of previous patterns of being and a heightened sense of authenticity. Their increasingly expanded consciousness and the reconstruction of meaning generated an enthusiasm for new choices and the courage to pursue them.

Implications for Practice This study points to a necessary reassessment of our assumptions concerning career development, discharge practices, and support for people involved in an involuntary workforce exit . As noted previously, a significant body of literature suggests an emphasis on providing systematic, instrumental assistance to people undergoing the involuntary loss of a career position. Such interventions typically include advance notification of job elimination, time off for conducting job searches, assistance with resume' preparation and interviewing skills, and severance provisions that help to reduce the negative financial consequences of job loss (Jacobs & Jones, 1990; Leana & Ivancevich, 1987), to name but a few. Limiting organizational assistance to such practical interventions, however, may fall far short of the assistance which may be most needed by individuals involved in job loss. Such interventions, in fact, were not described as being at all significant by this study's participants. Rather, study participants focused their stories on the nature of change, of self-knowledge, and a more discerning sense of self. By focusing on purely technical-rational interventions, we perhaps fail to acknowledge or value the undercurrent of the emotional life and the inherent conflict and turmoil that impact one's successful movement through this life experience. Study participants consistently described a compelling need for more than instrumental solutions and cognitive acquisition following their job loss.

The issue of personal identity and sense of self was a central theme in participants' stories. The extent to which participants described their sense of self as "shaken" may perhaps be dependent upon how closely one's sense of self was tied to an organizational role, or one's sense of worth to perceptions of performance. This leads us to question the extent to which especially the more classical, mechanistic organizational structures help to perpetuate an excessive attachment of personal identity and self-worth to role and performance. When we communicate and delimit, through organizational structure, reward, and recognition, workers' value in terms of role, status, and performance, we may inadvertently foster dependency and a constricted sense of self. Clearly, there is a need to foster increased dialogue concerning what this means in terms of organizational structure, leadership, and conceptions of career development within the organization.

The career development component of HRD may be especially suited to encouraging employee's to take a more proactive stance towards their careers, make choices about and assume responsibility for their behavior, and learn to reduce a sense of overdependence on the organization. Career development centers might include in their training, career programs, and mentoring programs components of stress management, dimensions of personal change, and strategies for dealing with the unexpected loss of a job. Most assuredly, such components should be a central part of any internal or external termination or outplacement program. Additional strategies include providing training and guidance to all managers involved in employee discharges, and re-thinking the more traditional way of conducting terminations: perhaps it is not so much a "severance package" that is needed, as a "support package" that includes adequate severance, job search training, and guidance and support for the transition.

Those of us working with individuals experiencing job loss, whether in outplacement, employment counseling, or other forms of job search assistance, are well-positioned to help people create a new vision of themselves and bring new meaning to their job loss experiences. This can only occur, however, by an increased recognition of the dynamics within this experience and valuing the extrarational processes at work. If grief work and the reconstruction of meaning is indeed the vehicle for growth, transformation, and positive outcomes, we must incorporate these dimensions with the more instrumental interventions we employ by providing the opportunity for the exploration of the affective and emotional work involved in the job loss experience.

This study poses a wide range of issues in need of address. What does it mean to really empower people within the context of work? What is our responsibility -- as organizations, as HRD managers, as workers -- to employees confronting issues of meaning and sense of self in the workplace? What tools and strategies might we make use of to assist people in their struggle to make sense of significant life changes? To what extent are instrumental interventions, such as advance notice and resume' assistance, morally adequate in the event of job loss? How do our HRD policies, discharge practices, and career development strategies enhance or hinder the positive resolution of job loss? Given the significant piece of our lives we devote to work and to developing workers, we must begin to address such questions, and many others. The extent to which we become willing to explore and reassess our assumptions within Human Resource

Development will determine our success, or lack of success, in the endeavor to make meaning of our work lives.

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Earning a Living or Building a Life? Reinterpreting the Meaning of Work in the Practice of Workplace Education

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In policy and practice, education is being increasingly linked to the world of work, a relationship which reflects a highly instrumental and technical view of work and assumes that we work to live. This perspective, however, is sharply inconsistent with the view of work emerging within organizational studies and other research. This paper explores the meaning of work as right livelihood and the implications of the idea that we live to work holds for workplace education.

Over the last 10 years, American policy makers have been placing increasing emphasis on the relationship of education and training to the world of work. Yet, for the most part, education in and for the workplace seems strangely out of step with alternative perspectives emerging in organizational transformation, transformative leadership, and teamwork. The tenor of the educational discourse surrounding these concerns, characterized by job audits, performance analyses, needs assessments, and job training, reflects language and perspectives reminiscent of the technical-rationality of Frederick Taylor and the scientific management movement. The alternative perspectives represent a clear break with the confining shackles of Taylorism and the limitations of the technical-rational view of work. Although not yet fully discernible, they represent the shape of an exciting movement which is re-examining life in the workplace and the meaning of work in our lives. Informed by a blend of Jungian psychology (Sinetar, 1987) mystics from the middle ages, twentieth-century philosophers (Fox, 1993) and psychologists (Csikszentmihalyi, 1990), eastern perspectives (Hawley, 1993; Krishnamurti, 1992), and studies of organizational life (Adams, 1984), these scholars are attempting to reawaken the spirit in work and to rediscovery soul in what we do for a living.

In this paper, I explore a more humanistic and spiritual conception of the meaning of work and its implications for education for work. Education for work emphasizes the development of knowledge, skills, and attitudes that, in some form, relate to a learner's participation within the economic sector of his or her community and the nation (Corson, 1991). This focus includes a wide variety of educational practices. In this paper, however, I will focus on those forms of practice which are provided primarily in or through the workplace, including traditional forms of HRD and workplace literacy programs. To avoid awkward use of language, I will refer to this form of practice as workplace education. Educators within these settings are called on to help workers deepen the meaning of work in their lives, to rekindle spirit within work and the workplace, and to foster an attitude toward work as vocation and "right livelihood."

The Relationship of Work and Education

Although the relationship between education and work continues to be one of the most contested areas in education today (Corson, 1991), educational practice at all levels is being increasingly grounded in and driven by notions of work and the "world of work". In public schooling, this debate is currently illustrated in the discussion of issues surrounding school-to-work transition programs (Stern et al, 1994)). Educational programs within postsecondary institutions are questioned as to their effectiveness in preparing young adults for the concrete demands and realities of the work world, especially within the professional preparation areas (Curry, Wergin, & Associates, 1993). Continuing educators are urged to consider the workplace as an integral part

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of what they do to develop professionals and basic skills educators are advised to frame their curricula within specific workplace contexts relevant to their adult learners (Carnevale, Gainer, & Meltzer, 1990).

At the core of this relationship between education and work are beliefs and values about the meaning and nature of work. These ideas about work inform and shape educational practice within work environments. Workplace education often reflects a "technical-rational" approach to the meaning of work and how knowledge about that work is acquired. Technical-rational approaches reflect the centrality of the job to be performed. In this view, work is objectively defined and the employee is relatively passive with respect to shaping and influencing the demands of the job. Although it is usually left unstated, work, from the employee's perspective, is often interpreted as a means to satisfy consumer needs and desires. Work is best understood as comprised of a series of discrete functions or tasks, apart from the person performing these tasks.

In the technical-rational approach, work-related problems are analyzed and dissected in order to make them amenable to instructional technology (Boud & Walker, 1991). This technology is typically characterized by job audits, performance analyses, and needs assessments. Decisions about curricular content, instructional methods, and evaluation procedures are grounded in and flow directly out of these procedures. This technology and the activities which flow from it are remarkably similar to the procedures of the scientific curriculum-making movement which arose in the early part of the twentieth century, in the wake of Talyor's scientific management and concerns for social efficiency (Kliebard, 1986). Reflecting a highly instrumental orientation to education, such approaches tend to view work as decontextualized from the personal, social and community contexts in which workers live. Unfortunately, the influence of this movement still reverberates through all levels and forms of education in the United States today, not just workplace education alone.

Emergence of a New Paradigm

Many scholars are beginning to question the pervasive reliance on the technical-rational perspective to work and its organization. Their work reflects a growing recognition that the realities of work are often much more messy and ambiguous than this technology implies (Ketchum & Trist, 1992; Schon, 1983). Four thrusts within organizational studies reflects this challenge: the learning organization (Senge, 1990), organizational transformation (Adams, 1984; Fletcher, 1990), employee empowerment (Ketchum & Trist, 1992), and the use of paradox as a framework for organizing our thinking in an age of numbingly rapid change (Handy, 1994). In using the concept of the learning organization, Senge suggests that we adopt a more holistic or Gestalt perspective to the world of work, in contrast to the analytic and reductionist perspectives that predominate the field, and locate work within contexts that extend far beyond the immediacy of the balance sheet and the needs and characteristics of the physical plant. Furthermore, we need to emphasize rather than minimize the social context in which this work is accomplished.

Organizational transformation is another concept which reflects the desire to move beyond the constraints of highly technical interpretations of how workplaces are structured and organized. Adams (1984) stresses the multiple perspectives needed to effectively bring about organizational change and how these different perspectives are all inter-connected:

> a new set of collective beliefs - a new paradigm - that is emerging in human consciousness has made me aware that transformations also must be examined at the organizational level as well as the global level, in order for us to live our lives more effectively. This new paradigm emphasizes, among other things, an expanded sense of personal identity and an awareness of the interconnectedness of people in their organizational cultures, and of organizational cultures to each other in the larger environment....our basic style of thinking is moving away from a Cartesian, reductionalistic/mechanistic base to include more expansionist and systemic thinking....These ideas have a great deal of applicability to the organizations we work in, and these organizations must provide the vehicle for personal and global transformations (my underline) (p. vi).

Focusing on understanding the nature and source of performance problems, Ketchum and Trist suggest that attention needs to be given to what they call a "third-order diagnosis" - attending to and changing the ways in which workers *experience* work, rather than trying to re-shape or replace workers themselves. This line of thinking leads to considerations of the nature of work that engenders commitment among employees. The authors reflect the importance of grounding the organization of work from the perspective of how it is experienced and made sense of by the workers. According to Handy, we need a new way of thinking about our problems in the work-world, as well as elsewhere. That new approach, he argues, is the management of paradox: "Paradox has to be accepted, coped with, and made sense of, in life, in work, in the community, and among nations" (p. 13). With this analysis, Handy cuts to the core issue of the meaning-making processes which we use to order and make sense of our lives. Among the paradoxes he identifies is "success at work and loss at life."

Workplace education is also being challenged to re-examine its reliance on a largely technical-rational approach to understanding the nature and meaning of work within the lives of individuals and within organizations. In workplace literacy programs, for example, employees resist curricula grounded in a functional context approach and see little relevance of such programs to their own lives (Gowen, 1992). As one worker told me during a break in his workplace literacy reading class, "This class has nothing to do with what I do in my work. It isn't helping me at all. Now, if they would teach me how to read and write better, that would be helpful!" Collins (1991) argues that the technological orientation overlooks important aspects of the social and community contexts in which the learner lives and works. Even in programs, however, that self-consciously attempt to address the workers' social and community needs, employees have a variety of interests and goals within the learning setting that are not fully represented by the educational program that is actually implemented (Kalman & Fraser, 1992). Professional preparation and continuing education programs are being increasingly challenged by alternative ways of thinking about education for work, such as practical or interpretive approaches to thinking about continuing education (Dirkx, Spurgin, Lavin, & Holder, 1993), the use of reflective practica for training (Schon, 1987), and negotiation (Cervero & Wilson, 1994) and deliberative curriculum inquiry (Harris, 1993) as approaches to program planning.

These emerging voices within organizational studies and education for work suggest a need to re-examine the very ways in which we think about work and our relation to it as individuals. It is to this question and the idea of work as "right livelihood" that I now turn.

Work as Right Livelihood

To the question of what one must do to be happy, Freud is said to have replied simply, "To love and to work." This pithy phrase has come to characterize the two major concerns within the field of adult development (Smelser & Erikson, 1980) and suggests that the value of work to the individual extends far beyond its instrumental or technical value. Work also involves strong affective meanings which serve to shape our relationship to and attitudes about what we do for a living. Increasingly, HRD and workplace educators are increasingly couching their practice in humanistic conceptions of work and education, and are emphasizing the developmental and career needs of the worker in this process (Watkins, 1991). Missing in this discussion, however, is the idea of work as a central life activity; that is, rather than working to live we live to work (Fox, 1994). This simple phrase captures a profound sense of the meaning and place of work in our lives.

Work as living There seems little question that work is at the center of adult living, an observation often reflected in the self-hatred and despair of the unemployed or the laid-off worker. Without a way for expressing the meaning of this central aspect of ourselves and for contributing to our community, we are often led to participate in psychological violence to our selves (Fox, 1994). To separate from work is to separate from living. Work as right livelihood conveys a particular relation of our selves his our work. It reflects a view of work which is "linked to the natural order of things" (Sinetar, 1987; p. 8). Talents that we are born with will eventually surface as a need and right livelihood is a natural expression of that need. There is a central truth reflected in the instructional traditions of cultures across the world, that work which is done rightly provides one with an understanding of some fundamental principles of life, that work is linked in a critical and central way to the health of the personality and to optimum, responsible functioning. According to Sinetar (1987):

> Work is one of the ways that the mature person cares for himself and others. Through his work and relationships the individual finds a place in the world, belongs to it, takes responsibility for himself and others. Work becomes his way of giving of himself. His work...provides him with a way of dedicating himself to life... (p. 162)

When we use work for this end and when the work environment is supportive of this end, our work can become a concrete way of actualizing our highest motives and contributing to the completeness of our personalities, regardless of the roles we play in life. Work as right livelihood draws our attention, however, not only to the work but the interconnectedness of the work, the person, and the community or the context of his or her life. As the quote from Adams (1984) provided earlier indicates, studies in organizational transformation increasingly underscore the importance of recognizing this interdependence in seeking to bring about change in organizations.

Inner work To think of work as right livelihood requires that we consider both "inner work" and "outer work" (Fox, 1994), or what Csikszentmihalyi (1990) refers to as the "autotelic personality" and the "autotelic job". That is, we must pay attention both to one's attitude or orientation to work and to the ecology or environment in which that work is structured and performed. From the perspective of inner work, we begin to understand what is necessary from the individual in order to realize his or her work as right livelihood. Studies of "flow experience", as well as Jungian psychology (Sinetar, 1987) and the mystical tradiions (Fox, 1994), provide a set of lenses for viewing more deeply into the nature of the relationship between the individual and the work. In his work in understanding optimal or flow experience, Csikszentmihalyi (1990) suggests that the modern worker's difficulties with work stem, in part, from his or her "relation to his job, with the way he perceives his goals in relation to it" (p. 160). When work is experienced as right livelihood, we often find ourselves "at one" with the work. While this idea might seem the province of the well-paid, white collar jobs, Csikszentmihalyi provides substantial evidence of workers in seemingly meaningless jobs who experience their work as right livelihood:

> The old woman who farms in the Alps, the welder in South Chicago, and the mythical cook from ancient China have this in common: their work is hard and unglamorous, and most people would find it boring, repetitive, and meaningless. Yet these individuals transformed the jobs they had to do into complex activities. They did this by recognizing opportunities for action where others did not, by developing skills, by focusing on the activity at hand, and allowing themselves to be lost in the interaction so that their selves could emerge stronger afterward (p. 151).

In these stories, Csikszentmihalyi begins to illuminate the nature of the inner work involved in work as right livelihood. Such workers experience their relationships with and to their work as flow. It is in the realization of work as a flow activity that we begin to understand how work fulfills human potentialities. "Work not only transforms the environment...; it also transforms the worker from an animal guided by instincts into a conscious, goal-directed, skillful person" (p. 149). Sinetar (1987) describes the worker as being fully present as a personality and fully there in the moment. This presence involves commitment of hearing, attention, and intention to doing the work with a narrow, intense focus which tends to transcend ordinary consciousness. When these qualities are present, the worker experiences the work as a kind of imperative or with a sense of intrinsic urgency. The work feels vitally interesting and results in an "inner push" for self expression, "to understand the work, to make something happen, to create" (p. 163). In this experience of flow, there is a surrender of the self to the work. It is an experience lacking completely in self-consciousness. The person becomes one with the work and, through this process of absorption and identification, the self, in a sense, disappears in the work.

These descriptions of work as flow and right livelihood strongly resemble the nature of "mindfulness" reflected in Zen Buddhism and other eastern disciplines. Being mindful of one's work means concentrating on "one's job even, or especially, during ordinary, boring times" (Sinetar, 1987, p. 165). It means bringing oneself into full awareness of the ordinary, unnoteworthy, and immediate moment. Developing this attitude towards one's work - the idea of work as flow or right livelihood - is a form of spiritual practice and perhaps one of the hardest of all. It means paying attention within what might be perceived by others as the most boring and dull of tasks, to be of the present, to be mindful of the flow in each activity of our ordinary life. For Sinetar, the transformation of duty into love, fascination, or pleasure is at the essence of the development of mindfulness and an expression or manifestation of when one is working with this spirit. By love, she means a tenacious orientation to the present, a sense of being without self-consciousness. It is a love that is beyond the restrictions and constraints of a desiring and self-centered self. Letting go of desire, of self-importance and self-consciousness, and of claims to autonomy is the beginning of this radical transformation of duty into love and a sense that we feels we at play when at work.

In describing this process of transformation, Fox (1994) refers to the experience of work as an experience of "via negativa". A variety of negative qualities can characterize our experience of work, such as irritation, misunderstanding, disagreements, pain, exhaustion, and strain. Rather than running from these experiences, Fox argues that it is important to look for the meaning behind these experiences, the gift that is being presented. Rather than quitting when faced with these experiences, the transformation of duty into love requires that we dive more deeply into our work. To do so, however, requires that we let go of that to which we cling. It is largely in the desiring and the clinging that the pain and the meaninglessness are created. This transformative process is filled with darkness and despair and our cultural response is to avoid it, to run from it. Yet, in doing so, we run from the very experiences which can lead us out of our meaningless work and into the experience of work as love. When we run from these experiences we run from ourselves and the opportunity to do the inner work necessary for this transformation. This transformation, as Fox points out, requires that we empty our souls and experience the emptiness and nothingness that is our work: "Nothingness - the experience of the via negativa - is a necessary requirement for healthy work" (p. 52). It is out of this space, this nothingness, that the meaning of our work is created, for our work is indeed an act of creation. But to experience this creation is to experience the space of emptiness within our work.

Many people today are alienated from both their labors and their talents. To overcome this sense of alienation requires that we think about our work beyond its instrumental value and consider work as an outer expression of our true inner selves. This process of transforming duty into love, fascination, or pleasure involves several characteristics of inner work: letting go of our desires and self-consciousness, experiencing the "dark night of the soul" that ensues within that letting go, and accepting our work as nothingness. Inner work, however, is only one aspect of the reinvention of work to which Fox (1994) refers. We must also attend to the "outer work", the reality of objective conditions to one's work and the role that these conditions play in our experience of work (Ketchm & Trist, 1992).

Outer work Csikszentmihalyi (1990) recognizes that his notion of flow is similar in many respects to perspectives available in eastern philosophies. In distinguishing flow from these perspectives, however, he underscores the importance of the outer work:

> Yu is a synonym for the right way of following the path or Tao...Some critics have emphasized the differences [between flow and Yu]: while flow is the result of a conscious attempt to master challenges, Yu occurs when the individual gives up conscious mastery. In this sense they see flow as an example of the "Western" search for optimal experience, which to them is based on changing objective conditions (e.g. by confronting challenges with skills), whereas Yu is an example of the "Eastern" approach, which disregards objective conditions entirely in favor of spiritual playfulness and the transcendence of actuality.

Csikszentmihalyi observes that work can be "either brutal and boring, enjoyable and exciting" (p. 154) and he argues that an inner focus is only one way of facilitating the experience of flow in one's work. One must also attend to the nature of the job itself, so that it is more conducive to flow. For Csikszentmihalyi, this involves making work more of a game with a variety of flexible challenges, clearly defined goals, and immediate feedback, such as hunting, cottage weaving, and surgery. That is, the work performed needs to be experienced as continually challenging the worker. Fox (1994) goes further by arguing that our outer work must flow from our inner work. By paying more attention to this inner work, jobs will be created. But these jobs are ones in which individuals can create "good work for others" (p. 136). Reinventing work requires that we first identify which actions are appropriate for today and then undertake these actions with a pure attitude.

The intimate and dialectical relationship between inner work and outer work that Fox describes provides the basis for identifying certain kinds of work that are needed to foster right livelihood among our workers. Quoting Schumacher, Fox claims that "the proper work for our species at this time in history is work on ourselves" (p. 133) and that our outer work must flow from this inner work. Exploration of our beings, hearts, and souls represents the real work that is needed for our times. In terms of actual jobs, this orientation takes on a number of forms, such as attending to the needs of the environment, dismantling the military-industrial complex, improving the education of our youth and adults, improving health care, investing in emotional health programs and providers, and fostering the appreciation of art in our society. A primary orientation on inner work can also have profound effects within the business, economic, and scientific worlds. In all of these spheres, inner work gives rise to a commitment to develop the spiritual and moral potential of the outer work and to develop community around a common task of building a more moral world: "Workers should ask themselves, How can my work create good work for others?" (Fox, 1994; p. 136).

The need for both inner and outer work A consideration of the work we do for a living as an extension of inner work represents the view of work as vocation or calling (Sinetar, 1987). Many studies, however, clearly show that the workplace is not a place of vocation and calling. People are not happy with and many even hate their jobs, including well-paid and privileged white collar and professional workers. To turn this around will require more than attending to the objective conditions of one's work. This dissatisfaction is indicative of the need for a paradigm shift in the world of work. The new paradigm needs to attend much more to our inner selves and the inner needs of our communities, what Fox refers to as the reenchantment of work. Others talk about this paradigm as developing a theology or spirituality of work (Hawley, 1993). The ultimate goal of those of us who prepare people for the workplace should be to foster a kind of vocational integration, a term that

> designates an individual who has committed himself to his vocation so wholeheartedly as to embody its qualities in his being and so that he does not have to wonder at every turn whether or not he wishes to continue to direct his commitment and energy to it or not (Sinetar, 1987, p. 174).

Many workers experience a sense of alienation from their work and their talents and abilities. For them work becomes a job and offers little hope of the kind of spiritual focus discussed here. To improve the quality of work life, then, involves both attending to our inner lives and also to the objective conditions of our work. Jobs need to be redesigned so that they reflect the needs of this inner life but we must also help workers enhance their knowledge of their inner selves and to help them develop skills which will enable them to see work as a calling and an opportunity for right livelihood and vocational integration. Education for work and, specifically, workplace education, can and should play a key role in fostering this paradigm shift. It is with this issue that I conclude this paper.

Implications for Workplace Education

In the brief space remaining, I can only touch on several issues related to developing workplace education grounded in the notion of right livelihood. Much more thinking and dialogue are needed to develop these ideas more fully. It will become apparent that these ideas suggest the need for a new paradigm, a whole new way of looking at education for work. These ideas, however, should be taken as a kind of outline by which we may work towards education for vocational integration.

Workplace education guided by the notion of right livelihood will reflect a different kind of scope from more traditional forms. Traditional conceptions of workplace education reflect a focus on the outer work, with little attention to the needs of the individual's inner work. Curriculum planning and development in workplace education continue to be driven by instrumentally-oriented conceptions of work and the needs of employers for increased productivity, efficiency, and overall improved performance. When the worker is left out of this formula, workplace education runs the risk of contributing to rather than ameliorating the individual's sense of alienation from his or her work. When we are being trained to invest in tasks against our wills, the process drains our psychic energy and we have even less to invest in our work. A workplace education which seeks to foster a sense of right livelihood needs to stress the worker's relation to his or her job and the way he or she perceives his or her goals in relation to the job. To start, we need to perceive our work as enjoyable and satisfying. The three most important issues for worker satisfaction are variety within the job, meaningful relationships with the people with whom they work, and less stress and more time for themselves and their families (Csikszentmihalyi, 1990). Variety and challenge are inherent both in the job and also in the ways in which we perceive opportunities for variety within our work. Educators can help workers learn to develop skills for seeing variety and developing this aspect of their work.

Building healthy and meaningful relationships with co-workers strikes more closely at the heart of what inner work involves. These relationships often embody the deepest concerns of the self. For example, organizations and institutions are often the object of negative projections by workers. They come to see institutions as conspiring, manipulative, exploitative, and secretive. Yet, organizations and institutions are neutral; it is the individual's relations with authority figures and other members within the group that constitute the basis for these feelings. These relations can serve as a kind of text by which workers come to understand more clearly the nature of their inner selves and how who they are as persons gets played out in their relationships with people. This means that workplace educators need to attend more closely to the affective or emotional dimension of their practice and provide a space for this dimension to have a voice. Workers' feelings about their work and about educational programs in which they are asked or forced to participate should be seen as more central to the task of workplace education and less factors which interfere with or obstruct its practice.

The experience of stress on the job often makes it difficult to appreciate what one is doing as vocation. Yet, numerous techniques are available to help individuals cope more effectively with stress and to reduce the stress caused by the way work is organized within an institution. Many of these techniques, such as deep relaxation and meditation directly address the discipline of developing one's inner life. Others, such as learning to communicate more effectively with bosses, co-workers, and members of one's families, reflect the deep transactional quality between the inner work and the subjective experience of one's job. Many of these strategies and techniques can be built into the processes of workplace education and do not require separate programs in which they are solely addressed.

Conclusion These three issues provide a preliminary framework through which workplace educators can begin to examine the extent to which their overall aims contribute to or impede the fostering of work as right livelihood. The processes adopted for such educational activities should stress the making of conscious choices and learning to accept the consequences of these choices. Educational activities used in the workplace need to incorporate strategies for encouraging creativity among worker-learners and to help them learn to function with full concentration and purposefulness (Sinetar, 1987). The instructional activities that educators select should also stress the need to build community among the workers.

To develop workplace education from the perspective of work as right livelihood is to suggest a dramatic shift in the way in which we view work. It is to suggest that we see the ends of this form of educational practice as one which contributes to workers building a life rather than merely earning a living. It is a form of educational practice that takes seriously the need to reawaken spirit and to rediscover soul in our work and in our lives. It takes very seriously the maxim that we live to work.

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An Examination of HRD Practitioners' Reasoning Regarding Ethical Dilemmas

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This study employed focus group discussions to determine how HRD practitioners resolve ethical dilemmas that affect their practice. Practitioners were asked to discuss five scenarios each representing a potential ethical dilemma. Results indicate that the major factors influencing practitioners' reasoning included the corporate culture of the company in which they are employed and the context surrounding the ethical dilemma.

Human resource development practitioners make, on a daily basis, decisions regarding program planning, marketing, teaching, and evaluating. When making these decisions, practitioners often are faced with ethical dilemmas. While the consequences of these decisions may not be as dramatic as they are in some other fields (e.g., medicine), recent lawsuits have focused on the design, delivery and selection of training programs (Eyres, 1990). In addition, the field of HRD continues to discuss issues related to the professionalization of the field and professional certification (Gilley & Galbraith, 1988). Because ethical dilemmas exist, lawsuits that question HRD practices have been filed, and dialogue continues regarding professionalization, there is a need to examine both the ethical dilemmas facing HRD practitioners and their resolutions of these dilemmas in their everyday practice. Brockett (1988b) reinforces this need when he suggests research be done that explores "the meanings that adult educators attach to their practice and how they would choose to deal with situations in which their ethical values are called into question" (p. 198).

Problem Statement and Theoretical Framework

Empirical research studies on ethics in human resource development are almost nonexistent in the professional literature. Most of the literature focuses on individual writers' discussions of ethical issues as they pertain to adult education (Merriam & Caffarella, 1990; Brockett, 1988a; Singarella & Sork, 1983), consulting (Gross & Robinson, 1985; Robinson & Gross, 1985; Pfeiffer & Jones, 1977; Lippitt & Lippitt, 1978), and management and organization development practitioners (Beeby et al., 1986; White & Wooten, 1983; Walton & Warwick, 1973). Some empirical work has been done identifying the dilemmas facing human resource development practitioners. One study asked trainers to provide examples of behavior observed which they considered unethical or improper for a training and development practitioner (Clement, et al., 1978). Through the use of content analysis, seven major categories of unethical behavior were found including:

1. Lack of professional development
2. Violation of confidences
3. Use of "cure-all" programs
4. Dishonesty regarding program outcomes
5. Failure to give credit
6. Abuse of trainees
7. Other improper behavior, i.e., lack of follow-up (p. 11).

More recently, select members of ASTD were asked to identify ethical issues facing HRD practitioners. A final list of thirteen issues were generated for the ASTD Models for HRD Practice (McLagan, 1989). Major issues identified by members included: avoiding conflicts of interests, maintaining appropriate confidentiality, saying "no" to inappropriate requests, and managing personal biases.

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In a study surveying adult educators, ASTD members cited more ethical dilemmas encountered than did adult basic educators and continuing education practitioners (McDonald & Wood, 1993). The five most commonly cited ethical dilemmas facing human resource practitioners in this study included: ownership of instructional materials, employment practices, confidentiality, financial issues, and conflicts of interest.

While these studies identified ethical dilemmas concerning HRD practitioners, how does one go about resolving these dilemmas? What are the important issues to consider when handling an ethical dilemma? Very little research has attempted to answer these questions. Gellerman et al. (1990) attempt to provide some guidance. They developed twelve cases representing various ethical issues facing "human development systems" professionals. Commentators were selected to analyze the cases and to provide alternative courses of action. Commentators included researchers, nationally known consultants, and philosophers. While these cases and analyses are useful in that they may increase one's "professional consciousness" and "test the clarity of your personal values and ethical reasoning" (Gellerman et al., p. 187), the discussions by the commentators do not necessarily reflect the thoughts of trainers, program designers, HRD managers, etc. who face these dilemmas on a daily basis.

Tannenbaum et al. (1989) did examine the ethical reasoning of both practicing psychologists and psychologists in training regarding potential ethical dilemmas in consulting situations. However, consulting does not cover the gamut of tasks and potential dilemmas facing HRD practitioners.

Research Questions

The purpose of this study was to examine the reasoning process HRD practitioners go through as they attempt to resolve specific ethical dilemmas. Practitioners were asked to consider the following questions as they discussed five ethical dilemmas:

1. Who is likely to be affected by the dilemma (who may benefit, who may suffer)?
2. What are the important issues to consider when dealing with this situation?
3. What additional resources might help you resolve this situation?

Methodology

The subjects for this study were twenty-six (26) members of an ASTD chapter. The subjects were randomly selected to participate in one of four focus group discussions examining ethical dilemmas in HRD. Focus group discussion format was chosen for a variety of reasons, including: 1. Their ability to provide insights into "complex behavior or motivation" (Krueger, 1994, p. 45); 2. The group setting provides a "synergy" which results in "an incremental increase in output" (Lederman, 1990, p. 119).

Five ethical dilemmas were created to present to the groups for discussion. The were chosen to reflect those frequently cited in the literature (McDonald & Wood, 1993; McLagan, 1989; Clement et al., 1978). The following five scenarios were discussed:

Scenario 1: You report directly to the VP of Human Resources. Often he/she asks you to reproduce copyrighted manuals and other training materials for training programs even though the contracts specifically state they are not to be reproduced. The VP's argument is that the company paid for the manuals/videos, etc. once, and should not have to pay for them every time the training program is offered. You have received clear indications from the VP that it is important for you to go along with his/her thinking. What do you do?

Scenario 2: As a corporate trainer you have supervisors/managers question corporate policies and procedures during training. They bring up valid points and often their thinking appears more ethical than the company's. What position do you take, as the trainer?

Scenario 3: In a training class, a participant brings up a situation involving his/her department or manager where there clearly has been a breach of ethics. You are concerned about what to do. Should you report the incident; or maintain the implied confidentiality of the training setting?

Scenario 4: You have been offered a lucrative contract with a company to develop and implement some training. You accept the offer even though you have limited experience and expertise with the particular subject. Shortly after beginning work on the project, you find yourself overwhelmed and your lack of expertise a tremendous detriment. You know the training will be substandard. However, you need the money and the credibility this project can provide. What do you do?

Scenario 5: You believe strongly in designing programs in an effective manner. However, the management team you work for does not allow time nor budget for front and back end assessments. You perceive they are simply working to "spend a training budget." How do you handle this situation?

A pilot test was conducted with a group of graduate students enrolled in a training and development course to determine the clarity of the instructions, to assess the appropriateness of the five dilemmas presented, and to provide feedback regarding the facilitation of the discussion. Each focus group discussion was 1 1/2 to 2 hours in length. The discussions were tape recorded and transcribed by an independent transcriber. The researcher then listened to each tape to check the transcript. The analysis focused on using the data to determine major themes that emerged from the four focus groups. Each scenario was analyzed to determine the major issues and themes of the particular case. Then the responses of all the cases were analyzed to determine if re-occurring themes were evident that suggest implications for ethical reasoning in general. Transcripts were read and analyzed by a second researcher to control for bias in interpretation (Krueger, 1994; Marshall & Rossman, 1989)

Results

Scenario 1: This case describes a VP of HRD asking a subordinate to violate copyright restrictions. The participants were asked to respond as if they were the subordinate in the scenario. The focus group participants suggested various ways to handle the situation, the most common including: documenting one's action, persuading and informing the VP regarding copyright laws, consulting the legal department, and leaving the job. Several indicated they would try to persuade the VP and if that did not work they would "post out." As one respondent stated:

> . . . this probably isn't the only thing this boss is unethical about, so if this were someone I were working for and he or she continually wanted me to do things that I didn't think were right, I would probably post out and get a different job.

Several participants, particularly in one focus group, provided justifications for not obeying copyright restrictions. One rationale given was that some vendors are over-priced, ". . . some people will consider what the cost of the product is and if it's over-priced, yeah, they'll reproduce it. They'll say 'Why should I pay it? I paid for it up front.'" A similar rationale was offered by another, "I'll photocopy it, because we figure we're giving these guys a couple thousand bucks a month for workbooks anyway, and they expect us to copy some. . ." Another participant suggested that sometimes vendors are profiting on what somebody else created or researched. In these cases, this participant stated, "So I don't bat an eye in those circumstances. I'll copy it if it's copyable . . . because that really irks me."

However, other discussants, particularly consultants, stressed the importance of copyright laws. One practitioner said, ". . . that the copyrighted material is that way because someone has expended a great deal of time and creative effort to put those materials on paper and it's only right to pay them."

Finally, for a few practitioners this scenario did not prove problematic because company policies reinforce copyright restrictions. Therefore, as one participant indicated "the monkey is off my back." These respondents implied that the corporate culture strongly reinforces the companies' policies and that this scenario would not likely occur in their organizations.

Scenario 2: This case asked discussants to consider what trainers should do when trainees question corporate policies and procedures during training. A frequent solution to this dilemma was for trainers to remain neutral. Common responses included, "I think I would listen to the discussion and take notes, that type of thing and not have to actually take a stand one way or the other during the course." And another that stated, ". . .I'd put on a great big hat that said 'Facilitator -- Do not ask me to take a position.'"

There was some debate whether the trainer has an obligation to report these concerns to upper management. Several felt trainers do have an obligation to do so, while others felt the trainees should be urged to do something about a questionable policy/procedure. Still others felt it may depend on the group one is training. For instance, one respondent stated, ". . .

> But since they're supervisors and managers, I'd also try to get them torecognize their own power to address some of these issues. If they were employees I would probably feel more of an obligation to relay some of that to higher management.

However, others felt that the training environment is not the place to take issue with corporate policies and procedures. One person said, "I've tended to just ignore it. . ." and several indicated that if you are spending time on this issue, you are not spending time on training.

Perhaps the most important issue to emerge from the discussion of this case was the role of the trainer. Is the trainer obligated to act as a "company spokesperson?" Many discussants clearly felt that trainers need to support the company when training. The following comments illustrate their thoughts regarding this issue:

> . . . One of the things that I've always been told is you support the company no matter how much you disagree with it and certainly in front of any type of a training group you would do that.
>
> . . . There's certainly room for individual opinion, but I think if you begin to take sides with an opinion that is in opposition to the company's stand, you really run the risk of not being there for a long time.

One individual, however, disagreed, stating, "One thing as a trainer that I would not want is for the supervisors and managers to see me as a company person that allied strongly with the upper administration and am assuming power over their lives."

Scenario 3: This case presents a dilemma involving confidentiality for a trainer. Do trainers have an obligation to report a situation involving a breach of ethics that is discussed in the training setting? While most respondents agreed the best possible solution was to convince the trainee to report it, the participants recognized this may not happen. The discussants were torn on whether they should report the breach of ethics. Among the reasons given for reporting the incident were: other trainees may decide to report it which could jeopardize your credibility, the breach may have long-term consequences for the company, the company may have strict expectations regarding reporting ethics violations, and to not report it might make one an accomplice to breaking a law (i.e., sexual harassment).

Various reasons were also provided for maintaining confidentiality including: the confidentiality of the person is most important, the trainer's credibility with trainees could be damaged in two ways -- being perceived as a "tattle-tale" and future trainees may be hesitant to reveal information in training situations, and that it really is not the trainer's job to report the incident.

For some, the severity of the breach of ethics would influence how they would respond. For example, the following dialogue suggests a situational approach:

> Participant 1: Going back to how much damage it would do or wouldn't do, particularly if it would be illegal, you know, and going to do a lot of damage to the corporation, I think that it would be quite serious. And are you going to just let it go?
>
> Participant 2: I think a lot of it comes down to, um, basically -- what? A gut feeling for the severity of the situation and who's said it and how serious it is to know.

Scenario 4: This scenario examines the issue of competence and whether HRD practitioners should accept jobs where their skills and expertise are questionable. The overriding solution provided by the focus group discussants was to continue with the project but obtain help, subcontract some of the work to others with the necessary expertise. While most agreed this was the best response, there was some disagreement as to whether you need to tell the client. One conversation regarding this issue went like this:

> Participant 1: But I think you have another ethical dilemma. And that is do you tell the organization - whoever it is - do you tell the person that hired you that this happened?
>
> Participant 2: I wouldn't. I would hire someone to come in and I would make sure the job was well done, but I wouldn't admit to the company that I had to hire. . .
>
> Participant 1: But you would tell a company - if you couldn't find a person, you'd tell the company. But if you found a person, you wouldn't?
>
> Participant 2: Well no, because I'm still providing the services that they paid me for by using staff.
>
> Participant 1: I just - I don't know - I just have a problem with it.

Some suggested one's credibility would be jeopardized if he/she does not tell the client about the problem and several felt telling the client should not be problematic to the client. All indicated something must be done (get help, bail out) or the person's credibility will be greatly damaged.

Explanations for how this situation occurs were offered as well. One person suggested that perhaps the client did not do an effective job finding out the person's qualifications, another suggested that perhaps the client did not provide enough details about the project, and another indicated that often the job gets bigger and bigger once the project gets underway.

Scenario 5: The last case is an example of a company employing poor training design (no front and back-end assessment). A few of the focus group participants indicated that they feel strongly about the need for these assessments, have worked hard to convince their companies of the need, and usually are able to conduct them.

The external consultants found this issue particularly salient. According the them, companies are often unwilling to pay for sound training design practices. The consultants recognized they lose money if they take job and do them the way they feel the job should be done. The consultants in the focus groups indicated they were likely to turn down these offers, but they recognized the difficulty in saying no, especially when people are new to the consulting business.

The majority of the discussants stated that this scenario happens all the time. And while they did not particularly like the fact that it happens, they did not perceive it as an ethical dilemma. Several reasons were offerred as to why assessment is not done including: companies do not allow time for assessment, companies are more concerned about training hours and attendance figures than effectiveness, and management doesn't understand its importance.

Most of the practitioners indicated that they compromise and make the best of the situation. Several situations came up where companies wanted their trainers to deliver the training in a shorter amount of time than the trainers recommended. The trainers presenting these situations stated they were able to negotiate a number of hours that suited both management and the training function.

Several seemed resigned to the reality of the situation. For example, one participant stated:

> . . . a lot of what we do isn't the quality standards I would like, but that's a constant battle and it's the same as - like any department head here, they don't have the budget they know they could use. They're not producing the quality they know they could produce. But it's the way life is and so maybe I've bought that too strongly and don't pursue excellence as often as I could with regard to back-end, you know, front-end analysis or follow-up. . .

Discussion

Two major conclusions become apparent from the data analysis of the four focus group discussions of five potential ethical dilemmas. First, the corporate environment in which the HRD practitioner works influences one's ability to work through ethical dilemmas. Those focus group participants who were employed in companies with strong corporate codes of ethics and who saw these ethical guidelines continually reinforced in practice, typically did not encounter certain dilemmas because of the corporate culture or knew how to handle the situation because corporate policies explained how to deal with the issue.

This theme was most prominent when participants discussed scenarios 1 and 3 -- involving the copyright issue and the confidentiality issue. For example, when discussing the confidentiality issue, participants appeared envious of those with policies that indicated how to handle this situation:

> Participant 1: It's clear - very clear. We have a very well defined program. It tells you things like - it is unethical to use company photocopiers for copying personal materials. It is unethical to use your PC for personal projects. It is - it is very, very specific. In fact, it's probably overkill. But everything has been covered so that if it comes up, it can be dealt with.
>
> Participant 2: It seems like that would make it easier in any of these situations.
>
> Participant 1: Yeah.

HRD departments may find this information useful. Adopting ethical guidelines and/or codes might help HRD practitioners handle difficult situations involving ethical considerations. However, a possible downside to strict guidelines is that employees may have little leeway in how they handle situations, which can be problematic if the situation warrants a deviation from the guidelines.

The second major conclusion is that in general, HRD practitioners saw ethical issues in situational terms. For example, in discussing the first scenario the focus group participants found several incidences where they might violate copyright restrictions. Their reasoning about the confidentiality issue included discussions about how serious the breach of ethics was and the long-term consequences of the breach. The discussants also contextualized their thinking in terms of their HRD role. Whether one was an external consultant or an internal trainer seemed to change some discussants' thoughts regarding particular issues. For example, in the discussion of scenario 4, many internal trainers suggested that their companies often ask them to do programs which may be beyond the trainers' capabilities. This did not appear nearly as problematic to participants as an external consultant taking on a job that is beyond his/her capabilities. This difference, based on roles, was also evident in the last scenario where internal people appeared less concern about unsound training design if the company seemed unconcerned. External consultants, however, were more likely to feel they had to do the front and back-end assessments or turn the job down.

Finally, the pragmatics of the situation influenced one's ethical choices. This was most evident in scenarios 1, 4 and 5. One participant admitted he/she would probably copy the material the VP asked for because, "For me personally, being really green and new at this, and also being in the position when I first got my job of being so desperate for a job, I'm not sure I'd have the guts to stand up to them." In the fourth scenario, several participants included the financial need of the individual in the case in their discussion of how to resolve the dilemma. Many in discussing the last scenario appeared resigned to the reality of little time or money to do sound training design.

Conclusion

Teaching ethics to students of HRD is not an easy task. While ethics in general, is difficult to teach; it becomes more difficult without a body of research to examine for guidance. This study was conducted to provide some insight into the reasoning process practitioners use as they attempt to resolve ethical decisions. The hope is that these scenarios and others might be used to teach students of HRD how to begin examining ethical dilemmas. Comparing their ideas and solutions with those practitioners in the study may help students determine their own awareness and understanding of the issues. While no conclusions were reached as to the appropriateness of the responses presented here, the results do provide some insight into the issues considered when attempting to resolve an ethical dilemma.

Obviously there are limitations to this study. The small sample size makes generalizing from the results problematic. The scenarios discussed represented primarily dilemmas involving training, hence there is a need to examine other HRD behaviors and activities. In addition, other issues that may influence the reasoning process need to be examined, such as years experience in HRD, perceived importance of the issue, and educational background. Examining these issues will provide insight into HRD practitioners' reasoning process as they work through the various ethical dilemmas they face on a daily basis.

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The Status of Intercultural Communication Training in Fortune 500 Manufacturing and Service Organizations

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A survey of Fortune 500 manufacturing and service organizations revealed information regarding the status of their intercultural communication training for international assignees. Results show that manufacturing sector organizations have a higher regard for intercultural communication training, have more international assignees, and are more likely to provide intercultural communication training than service sector organizations. This study also suggests that all international assignees should receive intercultural communication training.

Intercultural communication training should be a *strategic* business issue. Not only are the U.S. workforce and customer base becoming more culturally diverse, but business and industrial organizations are finding themselves in a global economy dealing with intercultural and international labor markets.

To interact effectively without misinterpretation and misperception, people must be culturally aware and sensitive. They must have knowledge of other cultures beyond stereotypical knowledge. To acquire this knowledge, some corporations, especially large corporations, are introducing intercultural communication training processes for their domestic and international employees, because at home and abroad, people must communicate with members of other cultures. Organizations, including small and medium-sized organizations (Black & Mendenhall, 1990), find that the need to send employees on assignments to foreign countries is rapidly increasing, because (a) intense competition by foreign trade partners calls for accommodation to their growing nationalistic assertiveness; (b) international business is not limited to trade, but includes foreign labor and expertise in production and marketing; (c) foreign companies are aggressively acquiring United States firms, which means dealing with foreigners on United States soil, as well as in foreign countries (Copeland, 1985); and (d) the European Economic Community has united to form one huge market, which means a significant increase in intercultural interactions (Guptara, 1990). As a result, intercultural communication training is needed to increase competence in international collaboration, which will be the "watershed talent separating growth businesses from those that begin to falter" (Copeland, 1985, p. 719). The literature indicates why intercultural communication training is needed both at the organizational level as a business issue and the individual level as a human resource development issue.

In this quantitative study, *intercultural communication training* is defined as a planned and organized attempt to increase cultural awareness and cultural sensitivity within people, so communication can occur among members of different cultures without creating offense through miscommunication, misperception, or misunderstanding. *Abroad* is defined as any geographical location other than the United States, and *international employees* or *assignees* are people who are sent to other nations to represent their organizations' interests.

Review of Literature

Intercultural communication training (ICT) is a business issue and a human resource development issue. Questions that were derived from the review and that guided development of the questionnaire are at the end of the literature review.

Intercultural Communication Training As a Business Issue. "Culture is not peripheral to business--it's central to business. It permeates every aspect of business" (Guptara, 1990. p. 13).

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Consequently, as in every other aspect of business, the bottom-line-need for intercultural communication training concerns dollars and cents. For example, of 80 U.S. corporations responding to a survey, 75% reported that 10% or more of the people they assigned to overseas posts had to be recalled or dismissed due to poor performance. The recall rate ranged up to 40%; yet, most of these people had excellent performance records before they were sent abroad (Copeland, 1985). Recalls of expatriates cost corporations hundreds of thousands of dollars in terms of the funds spent on recalled employees, funds spent to replace recalled employees, and monies lost due to missed business opportunities. As early as 1985, the cost of failed U. S. expatriation was estimated to be at $2 billion annually.

According to Copeland (1990), any employee who will be in a foreign country more than six months should receive intercultural communication training. He stated that shorter time periods are task oriented and, generally, include periodically bringing the employee home, rather then moving the family to the host country; therefore, the employee has little time or need to adjust to the foreign culture when on short assignments. The expatriate, on the other hand, usually resides in the host country six months or longer, which requires coping skills for daily cross-cultural interactions during an extended period, sometimes up to five years.

Intercultural Communication Training As a Human Resource Development Issue. Whether at home or abroad, all impressions that people receive are filtered through their own cultures (Kudirka, 1989; Guptara, 1990). The sender of a message, whether verbal or nonverbal, should be knowledgeable of the receiver's culture to avoid sending a message that could be offensive, misunderstood, or misinterpreted. Knowledge of another's culture leads to understanding the counterpart's position and leads to more favorable intercultural communication.

International assignees, however, are selected for several reasons other than their ability to communicate and to cope in a foreign culture. They generally are chosen for their technical expertise, management skills, availability, past performance, and willingness to go ((Black, Gregersen, & Mendenhall, 1992). If they have the expertise and willingness, why do so many expatriates fail to complete their missions? Obviously, other factors play a major role: Lack of self-confidence and inadaptability may be factors. Rohrlich (1987) suggests that a positive self-identity is as critical to Self as food is to life and that intercultural communication training improves intercultural interactions by improving self-confidence and thus self-identity (Copeland, 1990; Kudirka, 1989; Rohrlich, 1987).

Consider that Japanese expatriates rarely are recalled (fewer than 10%) and that they receive a year of training in effectiveness skills, which empower them to translate their managerial and technical competence successfully, and another year in coping skills, which enable them to become comfortable in a foreign environment. In addition, their families receive training in coping skills (Copeland, 1985).

In contrast, Dunbar and Katcher (1990) found that only 30-45% of the multinational corporations in their study provided some form of intercultural orientation to expatriates. The long training period and intensive intercultural communication training that Japanese expatriates receive for coping in a foreign culture appear to be important contributing factors to their low expatriate recall rate.

Following are some questions that developed from reviewing the literature and that tended to guide this study of intercultural communication training: Which organizations offer intercultural communication training to their international assignees? What are the organizations' top-level human resource development professionals' perceptions of intercultural communication training? What defines success of international assignees? What type of intercultural communication training exists in large organizations

Research Question

A high percentage of international assignees return home at great organizational and personal expense before their missions are completed, because they or their spouses were unable to adjust to living in the targeted culture. To aid in understanding the reasons for inability to adjust, international human resource development professionals should know the status of current intercultural communication training processes. This study was used to learn top-level international human resource professionals' perceptions of intercultural communication training for the international assignees of Fortune 500 manufacturing and service organizations.

Research Method

A descriptive study within the positivistic research paradigm was conducted using a mailed questionnaire survey. Following is a report of the population and sample, study design, data collection, and data analysis.

Population. The population chosen was Fortune 500 organizations, because these tend to be larger organizations, and it was assumed that larger organizations would be more likely to have established efforts in intercultural communication training. International human resource development directors were targeted, because it was assumed they would have knowledge about this area and process.

Sample. A simple random sampling procedure was employed to obtain representation of the entire population. One hundred randomly selected corporations from both service and manufacturing sectors comprised the sample--totaling 200 corporations (Borg & Gall, 1989, p. ~~233)~~.

Study Design. The study was designed according to guidelines for descriptive survey research (Borg & Gall, 1989). A review of the literature was conducted. The questionnaire was designed, developed, validated by an academic and professional expert advisory council, and pilot tested before finalizing the instrument. The advisory council confirmed instrument validity, and the pilot study served to test for content clarity and relevance.

Instrumentation. The items of the questionnaire represent a synthesis of the literature on intercultural communication training and expatriation. Both closed- and open-form questions were used. Likert-type-scale, dichotomous-variable, and multiple-choice items comprised the closed-form questions. Open-form questions were included to elicit previously unrecognized information.

The instrument was judged for reliability and validity. Instrument reliability was measured by Pearson Product Moment correlation and was 0.867 (Borg & Gall, 1989, p. 236). The instrument was assessed for content and face validity by the expert advisory council.

Data Collection. The questionnaire was mailed to 200 organizations, 100 from the Fortune 500 manufacturing sector and 100 from the service sector. The mailing included a questionnaire, pre-addressed and stamped return envelope, offer for executive summary of research results, and transmittal letter. The original and two follow-up mailings were at four- to six-week intervals.

Response Rates. The service and manufacturing sectors' response rates were noted. The overall response rate was 53%: 61% were from the manufacturing sector and 45% were from the service sector. Usable questionnaires were defined as those that came from respondents who had international employees: manufacturing (70% of respondents), and service (39% of respondents).

Data Analysis. Nominal and interval data were collected and analyzed using descriptive statistics, including means, standard deviations, and percentages. According to Borg and Gall (1989), descriptive statistics are sufficient for describing status.

Findings

Differences were found between the service and manufacturing sectors in their approach to intercultural communication training, starting with the response rate (see Table 1).

Response Rate. The response rate from the manufacturing sector was 61% compared to 45% from the service sector. Seventy percent of the manufacturing respondents have international employees compared to 39% of service respondents. Sixty-seven percent of the manufacturing organizations who have international assignees reported that they provide intercultural communication training, compared to 13% of the service organizations that have international assignees.

Of international employees in the manufacturing sector, 80% are abroad for periods of 2 years or more, compared to 34% in the service sector. Fifty-three percent of service sector international employees are abroad six months or less.

Training Duration. Respondents of both sectors agree that a short-term assignment is six months or less and that intercultural communication training is not as often provided for short-term assignments. Six percent of short-term service assignees and 24% of short-term manufacturing assignees receive intercultural communication training. Because most of the service sector international assignees are abroad six months or less, very few of them have any intercultural communication training. On the other hand, only 13% of their long-term assignees are provided intercultural communication training compared to 67% of manufacturing's long-term assignees.

When intercultural communication training is provided, it is generally for short periods. Most training is 4-16 hours. None of the service organizations and only 21% of manufacturing organizations provide over 16 hours. Although 80% of manufacturing assignees stay longer than 2 years and 67% of manufacturing organizations who have international assignees provide intercultural communication training, only 9% provide longer training periods of from one-to-four-weeks.

Type of Training. In the manufacturing sector, 31% of the organizations that provide intercultural communication training provide culture-general training and 93% provide culture-specific training. Some organizations provide both.

Providers of Training. Most intercultural communication training is provided by outside consultants (62% of manufacturing sector; 57% of service sector). In the manufacturing sector, most respondents (62%) reported that the training programs are custom programs developed for their organizations rather than off-the-shelf programs (13%) or off-the-shelf programs that have been modified to meet their needs (38%).

Definition of Success. Success as defined by 42% of the manufacturing respondents is completing the international assignment. Thirteen percent defined success as not coming home early and another 13% defined it as adapting to the culture. Only 11% based success on the bottom-line, and 9% based it on performance. The remainder did not provide definitions.

Reported Success. Seventy-four percent of the manufacturing respondents reported that the international assignees who received intercultural communication training were more successful than those who had not. The others reported that their international assignees were equally successful as those who had not received training.

All manufacturing respondents reported that at least 41% of their international assignees were successful for all of eight time categories given. The categories ranged from *less than one week* to *more than 4 years* abroad. Eighty-two percent of the organizations reported that 86-100% of their international employees are successful.

Perceived Relationship of Success to Intercultural Communication Training. A major difference between service and manufacturing sectors is their attitudes toward the success of the assignee as related to intercultural communication training of the assignee. Compared to 68% of manufacturing respondents, 40% of the service respondents indicated that providing intercultural communication training for the international employee is important.

Perceptions of Intercultural Communication Training. Compare perceptions of the importance of providing intercultural communication training to perceptions of intercultural communication training's contribution to success. Sixty-eight percent of manufacturing sector respondents said intercultural communication training is important and 67% said they provide it, but 80% said it contributes to success

Selection Criteria. One reason for the perceived importance of intercultural communication training for employees may be that international assignees in the manufacturing sector are chosen primarily for their professional skills (89%), then their technical skills (53%), but not as often for their communication skills (39%). The bases for offering intercultural communication training to international assignees were greatly varied among corporations and had little consistency: Those most frequently cited were assignment length (29%), needs assessment (26%), and destination (23%).

Satisfaction. Corporations are primarily satisfied with their intercultural communication training processes. Using a Likert-type scale from one to seven, 93% of manufacturing respondents indicated they were satisfied and 20% were extremely satisfied, but turnover of repatriates suggests that they may not be as satisfied as their employers report to be.

Retention of Repatriates. Of the manufacturing organizations that had international assignees return in the last five years after having been abroad a year or more, 63% reported some of those returnees left the organizations. Forty-four percent reported that 61-100% of their repatriates had had no intercultural communication training.

Table 1
Organizations' Perceptions of Intercultural Communication Training (ICT)

Abbreviated Items from Questionnaire	Manufacturing Sector	Service Sector
Respondents that indicated international assignees who have ICT are more successful.	74%	50%
Respondents who indicated ICT is important as a contributor to success of the international assignee.	87%	57%
Respondents who think ICT is helpful to international employees.	93%	50%
Respondents who think it is necessary to provide ICT for international assignees.	68%	40%
Respondents who provide ICT to long-term international assignees	67%	13%
International assignees who received ICT in the last year before going abroad.	82%	NA*
Respondents who are satisfied with ICT of international assignees.	77%	NA
Of organizations offering ICT, the % that offer culture-general ICT.	30%	NA
Of the organizations offering ICT, % that offer culture-specific ICT.	93%	NA

*In some cases, too few service sector respondents represented a cell to render meaningful data.

Discussion

This study of intercultural communication training in Fortune 500 organizations supports some previous research and also presents additional information. For example, this research extends Copeland's premise (1990). Copeland stated that international assignees who are abroad six or more months should have intercultural communication training; however, those who are abroad for shorter times do not require intercultural communication training, because they do not have to interact interculturally for an extended period. This study, however, shows that those international assignees who are abroad six or fewer months have greater failure rates than those who are abroad for longer periods, suggesting a need for intercultural communication training for all international employees, not only expatriates of more than six months. The following paragraphs present questions that developed from the intercultural communication training and expatriate literature and responses that emerged from this study.

Which Organizations Offer Intercultural Communication Training to Their International Assignees? The fact that most service organizations do not have intercultural communication training processes is at first surprising when compared to the data for the manufacturing sector organizations. Upon closer examination, however, logic indicates that fewer service organizations of the United States have reason to send employees abroad on business as manufacturing organizations do. As a result, they have little need for intercultural communication training processes when viewed in current terms of being necessary only for international assignees. Going a step further, logic indicates that the increasing multiculturalization in the United States and the rapid move toward globalization dictate that all organizations should plan to have intercultural communication training processes in effect soon for at least two reasons: (1) multiculturalization and globalization mean that few, if any, organizations will be able to operate without interacting with other cultures. Because interpersonal skills of employees often are already deficient when communicating with customers of their own culture, how much worse their interpersonal communication will be with members of other cultures. Misinterpretations and misunderstandings will rise exponentially and customer service and satisfaction will decline precipitously; (2) intercultural communication training is seldom, if ever, taught in the educational system; the programs within corporations are currently the only source of intercultural communication training processes to prepare employees for international/intercultural interactions (Odenwald, 1993).

What Are Top-Level Human Resource Development Professionals' Perceptions of Intercultural Communication Training? In the manufacturing sector, perceptions of intercultural communication training are more positive than in the service sectors. Again, it should be noted that few service sector respondents have international assignees (39%) and few offer intercultural communication training, so their experience with intercultural communication training is limited. Because their intercultural communication training experiences are limited, not all cells in the service sector's data represented enough respondents to be representative of the entire service sector. Service sector data is supplied where reasonable. The manufacturing sector respondents believe that intercultural communication training is important, helpful, and contributive to the success of international assignees. They primarily offer culture-specific training and are satisfied with the training (see Table 1).

What Defines Success of International Assignees? Success has to be more salient to the company than simply having the international assignee complete the assignment (41%) and not come home early (13%). These responses are a clear statement of the need for ways to evaluate success of international assignees. Corporate domestic employees are not considered successful on the basis of putting in a full day's work every day for a particular time period, perhaps six months or a year. They are evaluated on criteria other than attendance. If corporate administrators have other evaluation criteria, obviously most human resource professionals are not aware of them. If the human resource professionals are not aware of them, intercultural communication training and international assignee evaluation are not strategically positioned within the corporation: They are not part of the organization's strategy. If intercultural communication training were part of the strategy, selection of international assignees would be based on more deliberative criteria than professional and technical skills. This study supports others in finding that technical skills have priority; however, it is encouraging in finding that communication skills also are considered by 39% of the manufacturing sector.

Although international assignees may have completed their assignments, fulfilling the definition of success, lack or inadequacy of intercultural communication training may have contributed to dissatisfaction that led them to resign from their organizations. Black, Gregerson, and Mendenhall (1992) in their book *Global Assignments* report that 42% of American repatriates had seriously thought of leaving their firms since returning home, and 74% did not expect to be working with the same company within a year. The study reported herein found that 63% of the organizations that had international assignees return in the last five years after having been abroad a year or more lost repatriates.

At first glance, success rates may appear to be good, but even those organizations that report 86% success experience 14% failure, and many organizations reported much lower success rates. Successful organizations do not tolerate 14% failure of their products. Why do they tolerate 14-59% failure of their international assignments? The answer may be that only 11% of the respondents, all of whom were international human resource directors and vice presidents, recognize intercultural communication training as a bottom-line issue. Until human resource directors and organizations, in general, view intercultural communication training as a strategic issue and a bottom-line factor, intercultural communication training will continue to be the first item cut from the budget when economies are poor; intercultural communication training will not improve, although it will become more popular because of the move toward global organizations and economies.

What Type of Intercultural Communication Training Exists in Large Oganizations? Ninety-three percent of intercultural communication training in the manufacturing sector is culture-specific training. A solid foundation in culture-general training to develop cultural awareness and sensitivity, to recognize stereotypes and how they can be used positively instead of negatively, and to learn Hofstede's (1980) dimensions of cultures is at least as, if not more, important than culture-specific training. Culture-specific training generally focuses primarily on the do's and don'ts of a particular culture; whereas, culture-general knowledge provides foundational theory that can be put into practice to contribute to understanding other cultures, whether at home or abroad. After a solid culture-general foundation has been laid, culture-specific training should be provided to enhance specific cultural knowledge and sensitivity. As in all other studies, the basic foundation should come before the specialization.

Suggestions for Further Research

A great deal more research is needed on designing and developing intercultural communication training programs for all international employees, defining successful assignments, evaluating international employee's performance, and evaluating intercultural communication training processes. For example, the literature reveals a paucity of research of the (1) effects of intercultural communication training, (2) relative importance and effectiveness of components of the training curriculum, (3) processes for selecting international assignees, and (4) performance evaluation of the assignees. The study of intercultural communication is in its infancy, but it has a rich and solid foundation due to the work of researchers in anthropology, sociology, psychology, communication, cognitive and behavioral science, adult education, and, of course, intercultural communication. Because rapidly increasing globalization as well as multiculturalization on the home front force intercultural interactions on a daily basis, intercultural interactions are more frequent, but they are not necessarily more civil or more effective. The daily increase in racial and ethnic tensions should be a clear signal that global citizens can no longer afford to be culturally unaware and insensitive. Research in the field of intercultural communication training is desperately needed to identify methods and means for improving communication among diverse groups if global citizens are ever to interact effectively and peaceably.

Conclusion

Intercultural communication training is a relatively new and underdeveloped field that can contribute to synergistic cultural diversity, especially if it is researched and developed, so the theoretical concepts can be maximized in practice. Following is a summary of the study findings.

- *Who Benefits?* Intercultural communication training is viewed as a benefit to individual employees rather than to the organizational system.
- *Training Duration.* Short time periods are devoted to training--less than two days.
- *Perceived Importance.* Intercultural communication training is perceived as important by Fortune 500 organizations.
- *Contribution.* Intercultural communication training is perceived as contributing to the success of the assignment.
- *Focus.* Most intercultural communication training is culture-specific.
- *Success.* Success is defined as completing an assignment, but it should be seen as a bottom-line issue.

Future research should dwell on in-depth evaluation of intercultural communication training of international assignees to help identify their needs. Once their needs are identified, intercultural communication competencies can be identified and incorporated into training programs. To date, very little, if any, needs assessment or evaluation has been conducted in the area of intercultural communication yraining of international assignees.

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The Effectiveness of Change Agents as Affected by Strategic Interactions

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This action research study explored the nature of strategic interactions exhibited by a Chief Executive Officer towards designated internal change agents within several subsidiary organizations including a hospital, long term care facility and home health agency. A systemic pattern emerged whereby internal change agents were engaged in a fluctuating pattern of influence and then lack of influence. This pattern was effectuated by the CEO and progressed through a four stage process. As this strategic interaction was identified and discussed, new learning and behaviors were introduced within the organization.

The role of executive leadership has vital importance to any organizational change process. Much has been written concerning the many challenges that organizational change brings to leaders and conversely the challenge they must bring to the organization through their vision, words and actions (Bennis, 1989; Bennis and Nanus, 1985; Gardner, 1990; Kouzes and Posner, 1987). However, they can't do it alone and the support and cooperation of others becomes essential. As organizational leaders embark on their journeys of change, those designated internal change agents who take on the charge to plan and implement new initiatives become significant players. Change agents need to be aligned with and empowered by top management otherwise their ability to effectively influence change will be restrained. (Kantor, 1983; Senge, 1990)

This case study addresses the interplay between designated agents of change and executive leadership, specifically a Chief Executive Officer (CEO) within a health care organization. This interplay, when viewed systemically, was neither unique nor confidential but rather patterned and widely broadcasted to organizational members.

The Setting

The traditional ways of providing health care within a hospital setting are being replaced with outpatient services, home health services and when necessary extended care. Concern for costs now replace a regulated industry and informed patients cry out for quality care which is affordable and accessible. The need for effective leadership is paramount as the challenges of orchestrating change beckon . (Prezzano, 1992)

A New CEO Brings Change. Prior to the start of this study, a serious effort to change a health care system was well underway. Organizational structures were altered as the acute care setting now shared the stage with a thriving home health care subsidiary and an expanding long term care facility. A progressive, high energy CEO was hired to tackle the challenges presented by health care in general, and specifically to change a passive work culture dominated by hierarchical control to an involved and reflective work environment.

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Within the organization, progress was occurring as decisions were increasingly being made by first line supervisors rather than at middle or top management levels. Attempts to involve employees and physicians, intra- and interdepartmentally, were now underway. Teamwork, a familiar word in health care, was taking on new meaning.

Internal Change Agents Identified. The CEO had a cautious respect for outside consultants instead emphasizing the need for organizational members at all levels to own, understand and influence the process of change. Initially, only the executive team members (n=6) were the designated agents of change, this however was changing as new leaders were being identified to lead various change initiatives. For example, a radiology technologist was leading an interdepartmental team to reduce the waiting time for outpatients requiring more than one diagnostic procedure.

Rationale for the Study

From a strategic planning perspective, the organization was concerned with two initiatives that had cultural change implications. First was the need to improve productivity, a concept foreign to health care organizations (Chapman 1993). Extensive training and consultative efforts were put forth to assist departmental managers in developing baseline data to monitor and evaluate the efficiency and effectiveness of their operations. Second, decentralization was constantly emphasized as middle and first line managers were now responsible for planning and budgeting functions, including productivity improvement measures. Decentralization initiatives were now extending and expanding to include non-managerial employee involvement both intra- and interdepartmentally. After two years into this process of change, innovative ideas and actions were coming forth, some meeting success and others failing. To encourage risk taking, the CEO repeatedly used the phrase that "it is better to ask forgiveness than wait for permission", therefore failures became opportunities for further investigation and learning. As failures were encountered, designated change agents followed up by engaging in discussions to identify organizational barriers that may have inhibited change initiatives. The outcomes of these follow-up discussions many times evidenced underlying problems that required corrections, for example sabotage efforts by physicians or union stewards. These was some of the most challenging of change efforts and change agents had varying degrees of success at different times.

The hospital or acute care facility experienced the most resistance to change. Despite the growing number of employees involved in change initiatives, maintenance of the status quo was still normative. Change agents were becoming frustrated, some had already left the organization either by choice or involuntarily. The CEO requested a formal study of the hospital setting aimed at identifying barriers to change and planning appropriate interventions.

Methodology

An ethnographic perspective guided the inquiry into this study where the predominate means of gathering data were through observation and interviews. I had access to the site as a participant observer in the role of Corporate Vice President, Human Resources.

An Open Ended Paradigm. Schatzman and Strauss (1973) set forth an open ended paradigm which allows naturalistic studies to progress through a series of phases that alternate data gathering and analysis. When utilizing this model an initially broad base of collected data from the hospital gradually became more focused and ultimately very selective to the needs of the study. Geertz (1973) stresses the importance that patterns within social discourse, or "thick description", have in leading the way to interpretive study. This study, therefore was inductive in its approach to gathering data and generative in its attempt to assign meaning to collected data.

The Initial Phase. Field notes, during this phase, were based upon observation of interactions of employees that were involved in planning and implementing change. The specific situations observed were a result of an ever unfolding series of events that were not predetermined. The majority of the observations were in the context of formally arranged meetings or training sessions. My perception of the meaning assigned to group observations was then triangularized through individual interviews and small group discussions, usually informal in nature. (Agar, 1980)

Questions that were posed to data collected during this initial phase included:

A. How is change introduced?
B. Who are the change agents?
C. What occurs when groups of employees are planning for or implementing change?
D. What stimulates the change process to occur?
E. What restrains the change process from occurring?

The initial phase of the study was three months in length.

The Focused Phase. Based upon an analysis of data gathered in the initial phase, a funnel effect was produced in which selective attention was given to an interactional pattern between change agents and the CEO. Questions during this phase included:

A. What norms are guiding or hindering the process of change?
B. What occurrences or interactions appear to indicate failure or success toward organizational change?
C. How do change agents become empowered?
D. What distinctions can be made among executive, managerial, or staff involvement in change initiatives?

The focused phase of the study was two months in length.

Results

Throughout the hospital, employees at all levels believed that change was being inhibited by the "execs". Since the majority of the change agents were members of the executive team, data gathering and analysis gradually began to focus more closely on the "execs". After monitoring many discrete actions and activities, a pattern emerged. The CEO appeared to initiate or trigger a pattern which progressed through four stages.

The First Stage. During this stage an internal change agent was identified or introduced by the CEO to the hospital at which time clear statements of empowerment were made. Empowerment at this stage went beyond the scope of assigned responsibilities, thereby giving the change agent widespread access and authority. The change agent responded with confidence, eagerly addressing high risk challenges such as "taking on the docs" and successful change initiatives frequently resulted.

The Second Stage. Again initiated by the CEO, the change agent was chided behind closed doors as to his/her expansive influence within the hospital. Change agents gradually began restricting their actions to conform to formally assigned responsibilities. Mixed signals were now being given throughout the hospital. In some change initiatives, the change agent was successful and in others failure was met.

The Third Stage. The CEO's statements concerning and presence with the change agent was now noticeably absent. The hospital now had clearer signals; this change agent no longer has the influence to affect change. The change agent was now frustrated, failure after failure ensued. The change agent became concerned with identifying barriers to organizational change.

The Fourth Stage. At this stage the CEO would openly comment on the failure and ineffectiveness of the change agent. Similarly, the change agent acknowledged the lack of influence in affecting change and began withdrawing from the role as an internal change agent. Employment usually was discontinued at this time or if remaining employed, he/she became occupied with maintenance level functions and activities, such as generating reports and documents required for accreditation agencies.

Implications for Organizational Learning

The results of the study were first shared with the CEO and then with his executive team. This sparked candid discussions around the question, "What do we do to each other to enable or constrain our work?". The fact that what they 'did to each other' was known throughout the hospital was the most difficult for the executives to accept. A sense of embarrassment was expressed. The most significant outcome emerging from these discussions was an increased degree of candor and honesty being introduced into their communications thereby enabling double loop learning (Argyris, 1982) or deuterolearning (Bateson, 1972) to occur. At the conclusion of this study the question , "What do we do to each other?" was being asked and answered elsewhere in the hospital. An "unfreezing" that Lewin (1951) and others (Argyris, 1990; Schon 1983, Watkins and Marsick, 1993) describe was facilitating learning that extended beyond the more conventional ways of assigning meaning.

A Framework for Analysis

Goffman (1969) provides insight into interactional patterns that have a gamelike quality to them. The initial "move" is of considerable importance and triggers a response on the part of another. Mutual assessment is operative, going beyond expressive communication, in such interactions resulting in an enabling or constraining of another. Such patterns, identified as "strategic interactions" also serve to monitor social norms. The presence of such interactional patterns within an organization will have significance in any change process in which cultural norms are being influenced. The existence of the CEO-change agent interactional pattern that emerged from this study appears to have many of the qualities that Goffman associated with a strategic interaction. The underlying values communicated become relevant in planning and implementing change, particularly when old norms are reinforced, thereby cancelling out new initiatives towards normative change.

Implications for Further Study

The process of change has been and continues to be studied from various perspectives in a collective effort to increase the body of knowledge available to those committed to creating a learning organization. The further study of strategic interactions within the context of transformational change may be another perspective that can contribute to this knowledge base. Some questions that may need to be explored include:

1. Is the presence of an executive level strategic interaction related to the continuation of a centralized organization?
2. When does a strategic interaction accelerate or retard the change process?
3. Can organizational learning be enhanced through the presence of an effective strategic interaction?
4. Do strategic interactions involve other than change agents and the CEO?

Implications for This Study and Conclusion

Historically, the medical and allied health professions have been strongly influenced by positivism. This empirical viewpoint has made its firm imprint upon the organizational culture of a hospital. Correspondingly the hospital's "implicit curriculum" has been affected which serves to guide the learning process (Eisner, 1979). The implicit curriculum teaches the values of the hospital in a tacit manner (Polanyi, 1967). Hospitals therefore no longer just alter the expressive curriculum which includes the discussable and acceptable. The tacit or implicit must be raised to awareness, then thoughtfully and humanistically changed.

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TQM BINDS: FAILED QUALITY INITIATIVES *

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This paper presents and examines the concept of a "TQM Bind." The data analysis techniques of Chris Argryis' action science are employed, and a definition and two case studies of TQM binds are presented. Visualizing TQM Binds through mapping is demonstrated, and suggestions and strategies for avoiding TQM Binds are offered.

Introduction

Total Quality Management (TQM) promises those organizations who implement its principles increased quality and productivity as well as reduced cost, re-work, scrap, and production time (Crosby, 1984). TQM espouses attainment of these higher levels of efficiency and effectiveness through systemic measurement (Scherkenbach, 1991) and partnering with customers to identify problems or variances in work processes which are continually improved. The promise and allure of TQM is quite clear. Envision and improve. Measure and fix. However, many organizations which attempt to implement TQM often fall significantly short of their desired goals. Why?

Problem Statement

As organizations attempt to reap the benefits promised by the proponents of TQM, they often produce outcomes they do not intend. Moreover, organizations implementing TQM with some success often find it is "short-lived" or sporadic.

A study of the TQM initiatives in 528 companies by Ernst & Young found that many organizations spend too much time focusing on small problems, often "trying to do things that don't really matter to them," and setting unreasonable (and ultimately frustrating) goals based on benchmarking (Fuchsberg, 1992). Some experts suggest that quality initiatives do not succeed for reasons such as failing to focus on the most critical business processes, failure to align resources to support long-term improvement efforts, and failure to view the improvement effort as being integral to the strategic goals of the organization (Erickson, 1992).

To analyze further TQM implementation failure two questions are explored in this paper: 1) What accounts for the failure of TQM initiatives beyond the readily observable and frequently documented causes identified by Fuchsberg, Erickson, etc., and 2) What can organizations do to reduce the failure potential of their TQM initiatives?

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* The quality initiatives presented in this paper are not drawn from the authors' current employers.

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Significance

When organizations do not reap the intended benefits promised by implementing TQM, the entire organization is seriously affected (not attaining the desired outcomes of higher quality, lower cost and greater efficiency, etc.) Any mitigation of failure can reduce the potential negative consequences of inappropriate TQM implementation.

Theoretical Framework

The fundamental principles of total quality management and select theories of Chris Argyris' action science provide the theoretical framework for this study.

Total Quality Management. The "quality revolution" has been underway long enough so that the basic tenets of the TQM philosophy and implementation strategies have been defined. Briefly, Total Quality Management is a management approach to long term organizational success based upon a focus on customer satisfaction and the participation of all employees in improving processes, products, services and the culture in which they work (Zemke, 1993). Three individuals in the field of quality improvement - W. Edwards Deming (1989), Joseph M. Juran (1988), and Philip B. Crosby (1984) - are widely accepted as content experts. While each theorist has his own model for quality improvement, each model includes the same five basic elements frequently included in the TQM plans of organizations.

- *Obtain Commitment by Top Management* - Organizations must ensure top management understands and models the principles of TQM.
- *Educate All Employees* - Organizations must provide the education and training needed not only for top executives and managers, but also for employees to understand, utilize and enact the tools, techniques and principles of TQM.
- *Remove Barriers to Teamwork and Cooperation* - Organizations must foster teamwork and eliminate barriers which encourage individuals and departments to compete rather than cooperate with each other.
- *Integrate Quality as Part of Work Processes* - Organizations cannot rely on inspections to catch errors. Rather, continuous process improvements are necessary to eliminate errors with process improvements as the focus of corrective efforts.
- *Establish and Maintain Long-Term, Win-Win Relationships Between Employees, Customers and Suppliers* - Organizations must establish and continually encourage actions and innovations which will promote mutually beneficial relationships between and among all parties.

There is little question that a TQM initiative which fully implements the elements above offer an organization substantial competitive advantages (Caroselli, 1991). However, given the failure of many TQM initiatives, perhaps the challenge faced by many business leaders today is not *if* TQM works, but *how* it should be implemented.

Action Science. Action science asserts that values inform actions which then lead to consequences (Argyris and Schon, 1974; Argyris, Putnam and Smith, 1985). But often, organizations and individuals do not produce the consequences they intend because they hold conflicting values (wanting to implement TQM and simultaneously continuing "business as usual"). Action science provides mechanisms such as mapping (demonstrated below) for displaying and discussing observed behaviors in order to learn whether or not organizations and/or individuals are acting in congruent ways which will achieve the outcomes desired.

Methodology

The investigators used two case studies of failed organizational quality initiatives. One case study was developed by interviewing the consultant involved; the other case study was written by one of the investigators who worked directly with the organization. The cases serve as a data source for applying the theoretical constructs of quality management and action science. The researchers employed the critically reflective data analysis techniques of action science seeking to identify the assumptions, actions, and consequences produced in a given situation by examining the values and reasoning informing the actions taken. Specifically, the investigators identified: 1) espoused theories, 2) theories-in-use, 3) inconsistency or lack of alignment, and 4) possible redesigns to decrease the inconsistency and increase alignment.

Definitions and Examples Of TQM Binds

A *TQM Bind* is an organizational paradox created (often unintentionally) as a result of a poorly planned, weakly supported, or incompetently implemented organizational change effort such as a Total Quality Management plan. The "bind" is a consequence of attempting to change one or more aspects of the organization while simultaneously continuing to behave in ways which prevent the desired change from occurring. For example, an organization may attempt to change its culture to one of increased team focus, employee cooperativeness, and improved quality of service while simultaneously maintaining a performance appraisal system which individually compensates employees on a competitive basis.

As Argyris and Schon (1974) have discussed, there often exists a gap or difference between what organizations and individuals *intend to do* and what *actually happens*. This dynamic is what Argyris and Schon call the difference between an espoused theory (what organizations and individuals *say* they do when asked) and a theory-in-use (what organizations and individuals *do* when observed). Our notion of a TQM Bind comes from the gap between espoused theory and theory-in-use articulated by Argyris and Schon. The problems created by the differences between an organization's espoused theory (organizational TQM plan) and its theory-in-use (business as usual) create "binds" for employees who are "caught in the middle." The following case studies from two organizations - Megatek and Aerospec -illustrate the concept of a TQM Bind.

Megatek.[1] A major manufacturer of personal computers, Megatek, contracted with a consultant to design and deliver basic and advanced customer service training courses to several hundred new and seasoned customer service telephone representatives. The consultant was excited at the prospect in part because of Megatek's reputation as a steadfast advocate of Total Quality Management. For example, Megatek's leadership had given speeches over the years proclaiming a new culture of openness, honesty and integrity. The organization required all employees to attend training specifically designed to teach the new skills and knowledge seen as essential to the new culture described in the TQM plan. Conferences featuring the biggest names in the field of quality improvement had been held. Newsletters touting the benefits of TQM were distributed to employees monthly, and a resource library stocked with the latest books, periodicals, audio and video tapes relating to the topic of TQM was created. As part of the TQM effort, each department was required to develop a vision and mission which supported the organization's focus on customer service, process improvement and employee empowerment.

As the consultant conducted the customer service training sessions, she soon discerned that the veteran employee participants were quite indifferent with regard to the session content. During several separate discussions with participants of the training, the consultant identified the following problem which the authors call a *TQM Bind*. The message of the training sessions and Megatek's TQM initiative was: "Do what it takes to please the customer;" such as answering customer questions, solving customer problems, and assisting customers with identifying needs rather than merely taking orders for products. However, this message and its supporting activities were not what training participants were rewarded for on the job. Rather, their performance evaluations, bonuses, and promotional systems were based on the *number* of phone calls they could answer each day in two minutes or less. Megatek's customer service phone representatives quickly learned a myriad of tricks for cutting customers off, transferring them back and forth to other customer service representatives, and putting customers on hold to raise their call-answer rate. Repeated attempts by the customer service representatives to point out to their immediate supervisors that the call-answer rate requirement was in direct contradiction to the intent of the training, the organization's customer focus philosophy, and the TQM initiative, were rebuffed.

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[1] While the names of the two companies in this paper, "Megatek" and "Aerospec" are fictitious, the events described are real.

Megatek's customer service telephone representatives suffered enormous personal stress due to the need they felt to honestly assist customers calling with legitimate problems and issues and the unreasonable and contradictory performance expectations of their work environment. As one might guess, customer complaints began to rise since the quality of service was declining and their problems were not being solved. To add insult to injury, management identified the customer service telephone representatives as the "logical" cause of the problem. After all, reasoned management, it was the telephone representatives who were answering the phones. What action did management take to solve the problem? It required all new and existing representative to receive *additional* customer service telephone training and to implement stricter monitoring procedures of the phone representatives by their supervisors.

Aerospec. Another example of a *TQM Bind* involved a major aerospace engineering firm. Aerospec was attempting to change its organizational structure from a traditional hierarchical bureaucracy to a flat, collaborative, team-based structure. Aerospec chartered several experimental teams to test the effectiveness of this new structure. The teams were officially designated by upper management as empowered, self-directed work teams, framed as autonomous business units and encouraged to act as entrepreneurial entities.

One team determined that as an autonomous, empowered, self-directed entity, it had the right to make reasonable purchasing decisions. To the team members, this did not seem like an unreasonable assumption in light of the entrepreneurial charter they had received from the organization. Also, the team was well aware of Aerospec's rhetoric and had attended numerous presentations made by the general manager and vice presidents regarding the new organizational structure to be implemented. However, when the immediate supervisor of the team was informed by team members of their plan of action, she made it abundantly clear that she would need to approve *any* expenditures. The team protested bitterly saying, "either we are an empowered, entrepreneurial, self-directed team or we aren't! Doesn't entrepreneurial and self-directed include purchasing what the team needs? Aren't we an experiment to see if this new team structure can work?" The supervisor responded that while the team was empowered, she needed to watch over them and their budget. She further informed them that she was the only person the team could go to with signature authority. Not surprisingly, this action did not make the team members feel as though they were truly empowered, self-directed, or autonomous. "When push comes to shove, especially around money," the team members reasoned, "nothing is really different about the way Aerospec works. This 'empowered team' thing is a joke!"

Mapping TQM Binds

One technique in action science used by Argyris, Putnam, and Smith (1985) to describe and illustrate espoused theory and theory-in-use is mapping. Mapping is a form of data display comprised of values and assumptions, actions and strategies, and outcomes and consequences. The power of maps lie in their ability to raise awareness of organizational (and individual) paradox. The information displayed in maps can be obtained in many ways such as observations, interviews, focus groups, or critical incidents. Mapping the different theories (both "espoused" and "in-use") often makes the paradox or *TQM Bind* clear, as presented in the case of Megatek (Table 1).

Table 1

MEGATEK'S ESPOUSED THEORY

Values/Assumptions	Actions/Strategies	Outcomes/Consequences
Quality is important	TQM initiative developed	TQM training plan implemented
Customer service is important	Provide customer service training for employees	Employees skilled in customer service techniques
Training helps improve employee performance	Employees learn and performance improves	Customers receive excellent service thus increasing profits

Table 1 maps Megatek's espoused theory. The first column shows that Megatek *says* that quality and customer service are important, and training will help its employees achieve these values. In the second column, we see that Megatek *says* that its strategy or action for implementation is to enact a TQM initiative, provide customer service training for its employees, and make sure that employees learn. In the third column, Megatek *says* that it expects the outcomes or consequences to be an implemented TQM plan, employees skilled in techniques for providing customer service, and customers receiving excellent service which will provide the organization with higher profits.

Assume Megatek's intentions were good - that management really believed and intended that a TQM plan which focused on quality and excellent customer service would result in the intended outcome of larger numbers of satisfied customers, greater sales, and higher profits. From the case study example, this is clearly not what happened. Table 2 illustrates what really happened or Megatek's theory-in-use when Megatek implemented its TQM plan and created a *TQM Bind* which unintentionally created unsuccessful outcomes.

Table 2

MEGATEK'S THEORY-IN-USE

Values/Assumptions	Actions/Strategies	Outcomes/Consequences
Quality is important, but the "bottom line " is what really counts	Develop TQM strategies that are defensible and measurable	Employees respond to what is *really* valued and increase the number of calls they process, not the quality of the calls
Quality is important, but quantity is more important	Measure what is easy to measure or has always been measured	Measure number of calls, not customer satisfaction or how well employees solve customer problems
Megatek can value quality and focus on quantity with no alignment between the two and without repercussions	Say that quality is valued, but evaluate employees on quantity while acting as though this method is correct and not a contradiction	Employees value good reviews, so they do what is necessary, defeat the TQM initiative, thus discounting Megatek's desire to improve

Table 2 displays the values and assumptions Megatek conveyed through its performance appraisal system. While Megatek says quality is important, in reality quantity and the bottom line is what management *really* cared about. Further, the map illustrates management felt it could ignore the misalignment between the two systems (customer service and employee performance) without any repercussions. Megatek implemented a poorly aligned TQM plan that was defensible (i.e. logical or rational), easy to measure ("Wow, look at how many more phone calls we're handling!") but paid only lip service to quality by mandating quantity. The final column shows that as a consequence of Megatek's actions and strategies the number of phone calls answered were measured and employees responded to the *real* values of the organization. Megatek's management chose to ignore attempts by its customer service representatives to identify the discrepancy between quality and quantity and then went so far as to blame them for its own failure to improve the customer service system. Ultimately, the employees were forced to simply "do their job" and customer complaints rose. Dissatisfied customers, lost sales, demoralized and embittered employees, and wasted training dollars were the result.

As this mapping process illustrates, being able to "visualize" the paradox or "binds" can allow organization to see what it is doing that is counterproductive to stated goals. If the organization and its leadership are sincere, open, and honest in their TQM initiative, they can use Argyris' mapping process to begin to facilitate actions to resolve their problems.

Re-designing To Avoid And Minimize TQM Binds

To avoid creating TQM binds, the following five recommendations are offered.

* *Think systemically* - Organizations and individuals who can think in more interconnected and consequential ways will have a greater likelihood for avoiding unintended outcomes in the design and implementation of TQM plans.
* *Discuss issues openly* - Organizations and individuals who can discuss their issues openly and honestly will be able to avoid TQM binds more readily than those who cannot discuss their concerns directly.
* *Look for problems and try to fix them* - Organizations and individuals who actively seek out problems and attempt to address them stand a much better chance of avoiding and/or minimizing TQM binds. Proactively search for and address problems in TQM plans and implementation.
* *Reflect critically on organizational and individual practices* - Organizations and individuals who routinely challenge their assumptions and contemplate their actions stand a better chance of avoiding unintended outcomes and reduce the chances of TQM binds occurring. Using not only action science (Argyris, Putnam, and Smith, 1985), but also action research (Lewin - see Marrow, 1969), and action learning (Revans, 1980) could aid the reflective process immensely.
* *Be patient and impatient* - Organizations and individuals need to be aware that implementing a TQM plan is an individualized experience unique to each organization. There is no "right way" or "clear path," and implementation takes time and will be full of unintended and unanticipated mistakes. The key here is for organizations to be patient, realizing that binds will be created which need to be addressed, and simultaneously to be impatient by acting quickly to resolve binds once identified thereby avoiding unnecessary stress or unpleasant working conditions.

To address, attempt to minimize, or remove a TQM bind once it has been discovered, Argyris' (Argyris, Putnam, and Smith, 1985) recommendations for increasing individual and organizational congruence could be helpful.

* *Validate information* - Organizations and individuals seek information that is accurate or has been publicly tested for its accuracy with others.
* *Choose freely* - Organizations and individuals allow themselves and others to make choices which are fully-informed (no surprises or omissions) while respecting and monitoring the commitments made to such choices.

* *Combine advocacy and inquiry* - Organizations and individuals who express their opinions and views *and* ask for feedback and reactions which fosters a greater predisposition for productive dialogue.

* *Protect self and others appropriately* - Organizations and individuals who not only protect themselves and others when feeling defensive or emotionally threatened but who can also do so in ways that allow themselves and others to continue learning (this is quite difficult to do).

To illustrate how things might be different if an organization or individual enacted the guidelines described above, a re-design of Megatek's Theory In-Use Map (Table 2) is presented in a new map in Table 3.

Table 3

RE-DESIGNING MEGATEK'S THEORY-IN-USE

Values/Assumptions	Actions/Strategies	Outcomes/Consequences
Both quality and the "bottom line" are important; one supports the other	Develop TQM strategies which enhance and support quality and the "bottom line." Develop systemic strategies with relevant stakeholders such as employees and customers. Periodically evaluate strategies and results openly with employees and customers. Look for problems to fix.	Systemic, integrated organizational strategies are collaboratively developed and implemented which enhance the outcomes of the bottom line and quality while encouraging open dialog and reflection. Proactive problem-solving focus.
Quality and quantity are equally important	Jointly discuss and collaboratively develop meaningful measurement plans with those involved (managers and employees). Measure what is important and actually valued by all, not just what is easy to measure. Collaboratively evaluate results and re-assess in light of desired organizational outcomes.	Measure the number of calls (quantity) and customer satisfaction (quality) to ensure that everyone's needs are met (managers -productivity, employees - clear guidelines, customers - good service). Collaboratively evaluate results which encourages dialog, reflection, alignment and congruence.
Megatek can value quality and quantity while struggling to align both and simultaneously addressing the unwanted and unintended repercussions of any mis-alignment	Acknowledge the difficulty of implementing quality and seek help and input from employees and customers. Seek out problems and inconsistencies and collaboratively address them on an open, experimental way with those involved	Open acknowledgment leads to genuine dialog and congruent communication which sets the stage for more effective problem-solving which should increase the quality and quantity of service, profits, and employee and customer satisfaction

As this mapping process illustrates, re-designing is a difficult task. Notice that in order to minimize or avoid TQM binds organizations must be willing to critically examine their individual and collective values and assumptions, actions and strategies, and outcomes and consequences. Moreover, in order to avoid binds, a willingness to be open, inclusive, systemic, holistic, and experimental is needed. Comparing the differences between Table 2 and Table 3 one notices that Table 2 is more control-oriented, unilateral, and "quick-fix" oriented while Table

3 is more sharing, multilateral, and "big picture" oriented. Above all, it is worth noticing that the odds of Megatek achieving its goals are also improved dramatically.

Assumptions

Several assumptions provide the foundation of this paper. First, the assumption is made that TQM is worthwhile and that the five principles of TQM outlined earlier are worth pursuing. Second, the assumption is made that organizations and the individuals who comprise them are of goodwill and therefore TQM binds are most often created unintentionally. Third, the assumption is made that critical reflection can help prevent and solve many individual and organizational problems.

Conclusion

This discussion of TQM Binds could be relevant to any change effort, no matter how big or small- a new hardware system, a new employee compensation system, a merger, a takeover, re-engineering, downsizing or rightsizing. The recommendations made for avoiding or ameliorating the TQM binds could be applicable to other binds organizations and individuals may encounter in the process of change.

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THE IMPLICATIONS OF DELAY IN THE ORGANIZATIONAL CHANGE PROCESS

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The implementation of change is rarely a smooth process. Delay is introduced as a factor requiring management in strategic and operational change processes. This exploratory qualitative study in two healthcare organizations illustrated attitudinal reponses to delay at executive, manager and employee levels. Productivity and morale were negatively impacted. Proactive planning and clear, open communications emerged as two key ingredients to the successful management of delay in the organizational change process.

DELAY
To prolong the time of doing or proceeding with;
to put off; to defer; to retard; to stop,
detain or hinder for a time.
The New Webster Encyclopedic Dictionary

Organizations confront a myriad of events to which they must respond. Among the most challenging are those that become the contexts for substantial change and adaptation. These events are rarely static or contained within a discrete time frame. Unfolding over time, they demand continual adjustment and present unending challenges for all concerned. (Isabella, 1990). Today's management philosophers describe the environment as one in which the only constant is change. Change, however, is not always planned and not always desired. It is not a discrete process. It is often chaotic, punctuated by incremental progress and delay. Delay can be short or long term in nature, minor or major in perceived impact. Delay can cause uncertainty, alter relationships and cause dissatisfaction. It can also result in improved decision-making as a result of richer information. Delay in organizational change efforts presents significant challenges to all levels within the organization. Successful management of change includes the ability to anticipate and manage delay.

A hallmark of successful companies is the fit between external opportunity, organizational strategy and internal structure. Various forces create conditions in and around organizations that trigger change. These forces are messy, chaotic and painful. The implementors of change fight interruptions and impediments attendant to working through the change effort. Since the change process rarely proceeds as smoothly as originally planned, a better understanding of the ramifications of delay might assist organizations in managing this phenomenon more effectively.

Strategic Change Research

A large body of diverse literature and research is devoted to understanding strategic change. Researchers have looked at it from a variety of perspectives. Some researchers have looked at the identification of the need for change, studying the precipitating factors (Child & Kieser, 1981; Meyer, 1982) and the interpretive processes involved (Bartunek, 1984; Dutton &

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Duncan, 1987; Milliken, 1990).

For others, the focus of investigation has been upon the process of implementing organizational change, with issues including how change occurs (Kanter, 1983; Quinn, 1980), who initiates it (Robbins & Duncan, 1988; Tichy & Ulrich, 1984) and what constrains it (Aldrich & Auster, 1986; Boeker, 1989; Pettigrew, 1985; Staw, Sandelands & Dutton, 1981; Stinchcombe, 1965).

Other theorists have attempted to understand the nature of change and have devised distinctions, including first-order and second-order change (Watzlawick, 1978), piece meal and quantum change (Miller & Friesen, 1984), and continuous and discontinuous change (Hinings & Greenwood, 1988; Tushman & Romanelli, 1985).

Still other researchers have examined how organizations change in anticipation of or in response to environmental threats and opportunities (Pfeffer & Salancik, 1978).

When well managed organizations make significant changes in strategy, the approaches they use frequently bear little resemblance to the rational-analytical systems so often touted in the planning literature. The full strategy is rarely written down in any one place. The processes used to arrive at the total strategy are typically fragmented, evolutionary and largely intuitive. (Quinn, 1978: 7) The real strategy tends to evolve as internal decisions and external events flow together to create a new, shared consensus for action.

Organizational Change Research

Within the literature related to organizational change, there has been considerable research about the sequence of activities that facilitates the process of change (Delbecq and Van de Ven, 1971; Hage and Aiken, 1970; Lewin, 1947; Lippitt, Watson and Westley, 1958). While change at its most basic level has been said to consist of unfreezing, moving and refreezing (Lewin, 1947), movement through these stages involves more than sequential activities and behaviors. Research suggests that a substantial amount of cognition and interpretation accompanies the process of change (Isabella, 1990). As change unfolds, various orientations are required. Frames of reference shift:

> Transitions are themselves transitional. When a change is initiated, existing patterns are disrupted and this results in a period of uncertainty and conflict. If key people accept and support the change, novelty turns to confirmation and eventually the innovation is routinized. (Quinn & Kimberly, 1984: 303)

A few studies have examined interpretations of specific organizational events over time, identifying similarities in points of view (Gephart, 1984) or construed realities (Sutton, 1987) that guide the attribution of meaning and significance. Organizational members actively create or enact the reality they inhabit (Weick, 1979). They create a "material and symbolic record" (Smircich & Stubbart, 1985: 726) upon which they predict future action. The views of managers are especially salient because managers appear to be at the heart of the cognitive shifts that occur during organizational change. (Isabella, 1990: 9) How managers view delay and, more importantly, how they communicate about delay can facilitate necessary cognitive shifts. Managers serve a key cognitive function in organizations by interpreting events and ultimately using these interpretations to frame meaning for other organizational participants (Daft & Weick, 1984). Because leaders have the formal authority to prescribe interpretations, their viewpoints and how they shift during change can be highly significant and instrumental. (Pfeffer, 1982).

Recognizing the contributions and limitations of organizational and strategic change research the present study explores delay and its ramifications on the organizational change process.

Methods

The problem which precipitates this study is the effect of delay in the implementation of change upon organizations.

Research Strategy. The study was designed to identify the factors inherent in delayed change. The study is exploratory in nature. Participants were asked to describe and discuss two organizational changes in which delay was a factor. Individual interpretation and response to delay in organizational change efforts was solicited. The qualitative research approach is consistent with research goals in the study. (Katz, 1982)

Sample. Eighteen individuals participated in the study. Nine people were selected from each of two medical centers in the midwest. Three distinct organizational levels were represented: six members of top management, six mid-managers and six employees. Top management was initially approached, who in turn recommended other individuals in their divisions. Tenures varied from one to seventeen years. The functional areas represented included: Finance, Patient Care Services, Human Resources, Physician and Clinical Support Services.

Data Gathering. The research approach allowed individuals to describe and discuss two organizational change efforts involving delay as the basis for general discussion regarding the organizational change process.

Prior research in both the organizational and strategic change literature was used. Of particular interest was whether delay would impact productivity and morale. In addition, whether perceptions regarding the effect of delay on change effort would vary by organizational level.

The specific purpose of the interview was to learn as much as possible about participants' concerns, perceptions, reactions, observations and thoughts in connection with delay. A preliminary interview schedule was constructed. Following pilot testing with two individuals unconnected to the study, slight revisions were made. The final interview guide contained six open-ended questions. Interviews were semi-structured and lasted approximately one hour. After outlining the genesis of the study, the research process was discussed and each participant assured of confidentiality. Background data on each participant was collected at the beginning of each interview. After collecting data about the two examples of organizational change efforts involving delay which they had experienced, participants were asked the remaining interview questions, allowing for discussion concerning other delay implications not previously discussed. An effort was made to gather as much rich detail as possible concerning the examples. Participants were asked to elaborate upon these events in detail and clarifying questions were asked. At the end of each interview, participants were asked whether they had any other thoughts relative to delay that they felt important but which had not been discussed. Detailed notes were taken during each interview to allow for systematic analysis.

Executives and Delay

Executives function in a complex, often ambiguous world. They are the strategic leaders of organizations. The burden of strategic decision-making rests on their shoulders. It is not a responsibility they take lightly. The future success of organizations, indeed their very survival, may lie in their collective hands. Table 1 summarizes the examples and responses to delayed organizational change outlined by executives.

Each of the twelve examples of organizational delay provided by executives was strategic in nature. They discussed restructuring, downsizing, mergers, role changes, strategic alliances and functional consolidations. In each instance the underlying reason for the delay was political. Key people in positions to call a halt to action did so. Stakeholders were both internal and external to the organization. Executives recognized information serves as the basis for good decision-making and saw delay as facilitating additional data gathering and political support building. Delay often further complicated the already complex executive role.

"The organization was not performing. We were losing a lot of money and, even though the board was initially tolerant, we decided to close the program," explains one executive. "We knew there would be community repercussions." He explained that both a trusted board member and the medical director were involved in the decision. He remembered being anxious over the decision, particularly because some of those losing their jobs were physicians. Although the organization acted very quickly, delay occurred to ensure all key stakeholders were supportive. The waiting took its toll on him personally. "I have to make decisions in the best interest of the organization. I am determined to do the right thing." he explained.

The formation of a new physician alliance presented challenges to another executive, "I am the communicator with the physicians, he said". "When delay occurs, rumors begin and I spend all my time communicating." He saw delay as "not part of the plan", and compared it to the holding pattern of an airplane before landing. As a seasoned executive, he felt he took delay in his stride and was empathetic with those who do not. He felt delay may be a necessary part of thinking through all the issues, system consequences and communicating with those affected.

Delay also means heightened ambiguity at the executive level. Often executives are the first to learn of coming changes but cannot reveal what they know. "Planning becomes impossible," complained one new executive, after learning of a possible role change. "I know I will have to live with this ambiguity for the next six months. I'm ready to move and am excited about the change, but must wait." Another executive talked of healthcare changes which necessitated drastic organizational cuts. He knew it would mean substantial job loss and that although it had been decided that this was necessary for organizational survival, the process had to work itself through.

The need for strategic leadership often places executives in positions where they may themselves be the cause of delay. Proposed changes may be fraught with political consequences and delay may allow time for thought or negotiation. After agreeing initially to a politically-sensitive hiring decision, one executive shared that her CEO asked her to wait. "I felt as though I was walking on eggshells, but it had to be processed further." Yet another senior manager talked of a program decision which he had to put on hold. "My manager didn't see the bigger picture. He couldn't understand the possible ripple effects."

The majority of the executives interviewed described themselves as "big picture people." They have the ability to "see all the ramifications" of delay. "It is a heavy burden" shared one interviewee. Executives are generally used to delay and view it as a normal part of complex organizational life. "You end up in senior management through competence and personality," one executive shared. It was his belief that unless executives learned to handle delay personally they would hinder their career progress.

There is some fear that peers are stalling for political advantage. One vice president described the "fear factor." He talked of suspicion, frustration and uncertainty and viewed delay as "a troubling time whatever the reason."

Executives are empathetic to the information needs of managers and employees in delay situations. "Management has a parental role", one executive explained. Another acknowledged that "midmanagement is caught" without the full picture. "They try to be conscientious but aren't as used to delay. They want to produce but can't because of the delay." There is, however, recognition that most of the time it is senior management which is ultimately responsible for delay and its ramifications.

The executive role in the communication of delay is recognized. "Leadership credibility plus good communication and understandable reasons may make delay OK," said one executive. "The lack thereof makes delay very hard." History was seen as playing a role in how individuals interpreted delay. "If delay is seen as frivolous, our leadership credibility drops," shared a senior manager. "We must manage the personal side of change with lots of education, communication and involvement," explained another. "The bigger the delay, the more information is needed."

Executives don't appear to cope well personally with delay, despite having broader knowledge and being experienced at having plans delayed. They describe anxiety, frustration, anger, loss of control and lowered self-worth as some of the feelings accompanying delay. "The organization is my first priority" shared one executive. "We must balance diverse opinions." Maybe it is this heavy sense of responsibility that causes the high stress levels described as accompanying delay at the executive level.

Managers and Delay

Often seen as "in the middle" between top management and employees, managers must constantly balance the needs of both groups. When delay occurs, managers look to the executive level for strategic and operational guidance and direction. They must then explain to those below them the reasons for the delay and its consequences. Middle management, sees its role in the organization as getting things done through people. They see themselves as an integral part of the change process. Table 2 summarizes the examples and responses of mid-level managers.

Top management may make the initial change decision, but the information necessary to implement the decision resides at lower levels according to managers. They believe delay is often created as data filter down and up the organization. Lack of proper planning is seen as an issue which handled appropriately, may alleviate or negate the impact of delay. Top management is viewed as responsible for planning. Delay prevents managers from getting the work done. Action oriented people, for the most part, they quickly identify the practical problems which delay creates. Managers see delay creating all sorts of customer service problems for them, from lack of data to lack of supplies. They become frustrated when they feel unable to perform their jobs due to delay and become concerned over the potential productivity and morale ramifications. How delay is interpreted by employees can make their jobs either easier or tougher.

The schizophrenic nature of middle management is reflected in the examples of organizational change it provided, particularly with reference to the reason for the delay. Even though the nature of the change may have been strategic in nature, the reason for the delay was expressed in both political and operational ways.

Politically, "my relationship with the CEO allowed me prior knowledge," one manager shared." I knew the information was highly confidential and appreciated the trust." "I know the change will happen," says one manager of a role reconfiguration, "but I don't know when." Another manager described convincing the CEO of a potential clinical affiliation, only to find the project stalled due to lack of political support. "No one moved. My vice president was not interested. It took time and persistence, but the project was eventually successful."

On the operational side, one manager described his frustration over delays in the delivery of a critical piece of clinical equipment. "We trained folks for the new equipment. The value of the training is probably lost because people couldn't use the new skills due to the delay." Another manager described learning of a new program which could potentially affect employee benefits. Should the program be implemented it would cause operational delays for his department. He also discussed the operational impact of delays regarding compensation program changes. "The timetable has been seriously compressed. It's a major issue. Training, education and communication will be hastily planned as a result."

One manager described the need for "support from the top and 'buy in' from the bottom" as key elements to successful change. He saw "communication of the reasons for delay and understanding of those reasons" as critical in working with employees. Another manager shared that "top management doesn't understand implementation issues" and saw her role as "getting 'buy in'." She viewed delay as "people throwing up roadblocks", political lack of support, overtly or covertly.

Employees have an hard time understanding why there is delay even when they support the change effort. People want to do a good job and are frustrated when they can't due to delay. Getting accurate, timely information to employees is seen as critically important to controlling employee anxiety about delay. Many of the managers interviewed mentioned the demoralizing effect of delay. "When communicated change doesn't happen, it causes loss of belief in the organization and what employees are being told," explained one manager, " change can be very threatening lower in the organization. They have less control." "Employees will come up with their own answers in the absence of information," shared one manager. "Good managers communicate and the rumor mill is not fed."

Yet, even as they recognize the need to respond to employee needs for information the managers themselves must deal with delay. "We must manage day to day and also manage delay" one manager expressed, frustratedly. "The department reflects the attitudes of the manager," another explained. "Some managers understand the complexities of change and communicate effectively, other do not." "All my energies go into trying to calm down staff," shared one manager coping with the aftermath of a restructure delay. "Bad news is better than no news," she concludes.

Some managers interviewed believe that systematic planning would facilitate the change process and help minimize delay which the organization can control. Others see change as "an ongoing process of adjustment" in which it is impossible to predict all the variables, thus making delay almost a given. One manager agitatedly explained, "There isn't a plan!" She was concerned that a delayed change effort was receiving less top management attention than she believed it deserved. "We overestimate our ability to accomplish things," another manager explained. "Delays happen because we look at change as work, not as people. The technical pieces are easy, the people part is not."

Managers see themselves as probably the most affected by delay. Delay causes anxiety at the management level because there are strong productivity expectations. "We react the most turbulently. We are dealing with things day to day." shared one manager. "The impact is bigger," another manager explained. " We have a business perspective." Balancing operational demands against people needs poses clear challenges for managers faced with delay.

Employees and Delay

The responsibility for carrying out the day to day work of the organization rests on the shoulders of employees. Delay can prevent them from performing their jobs. This can be frustrating to people who want to do their best to help the organization accomplish its objectives. The responses and examples provided by individuals interviewed at the employee level are summarized in Table 3.

Often feeling as if they are being kept in the dark, employees resent not being informed, honestly and openly, regarding delay. They expressed wanting to be treated as responsible members of the organization and to have the opportunity to be consulted on plans resulting from delay. Viewing the lack of communication as an important factor in making delay harder for the organization to accept, they, nonetheless, appreciate the complexities of change and the attendant potential for delay. Leadership credibility emerges as a key variable in how news of delay is received. If trust exists, even disappointing and frustrating delay will be handled. It is the lack of information that employees view as the ultimate dissatisfier.

All employees interviewed shared their personal frustrations, even anger, at not knowing what was the cause of delay in major organizational change efforts. Interviewees talked of wanting to be part of the team and to be treated as important enough players to deserve to be kept informed.

"Tell us the facts," requested one employee." "Let us deal with it. Treat us as adults." "Just tell me," begged another. "Be direct with me, don't treat me as stupid, " entreated yet another. The theme was repeated. "Give me the information, honestly. Let me handle it," asked yet another. Delay is seen as affecting employees' abilities to feel as if they are in control. There is a keen sense that information helps put things in perspective and assists them make better personal and work-related decisions.

"People assume we know a lot more than we do," shared one employee frustrated by delay experienced after learning of a procedure change affecting her job. The lack of information about why nothing was happening initially caused her to worry, but after a while she "just kicked back". "I'm not used to things dragging out without any knowledge of what's going on," she shared, "but I just decided I am very capable and can handle things when they do change." Despite the strong words, there was still a suggestion of self-doubt. The anticipation appeared to be taking its toll on her morale.

In environments filled with uncertainty, the rumor mill often becomes the best way to get information. "If we don't know what to expect, the rumors start," explained one employee. "Without feedback everyone develops their own scenario." another complained. "We're not told enough. Sometimes we're told not to worry. We do anyway. More information makes delay easier to deal with. If uncertainty is high, people become concerned and productivity goes down." This young lady had previously shared a frustrating example in which delay affected her ability to provide customer service. She described having worked extremely hard to build a strong service reputation, only to have her efforts undermined by her current situation. She was not the only employee frustrated by delay. "I cannot get straight answers," another employee stated. "How do they expect me to do my job?" Yet another described the frustration of having to "make do" with inadequate equipment. She personalized this scenario, explaining that she questioned her value to the organization when the promised equipment was delayed.

Despite these demoralizing examples, employees do appreciate that life in organizations is dynamic. "No one can see into the future," explained one of the employees. "Things rarely go as planned. You can anticipate a lot, but not everything." This was a commonly held belief among all the employees interviewed. Each touched on it in a slightly different way, but there was a common theme. "Even when the change is agreed upon and fully discussed, it probably doesn't end up as planned. The first idea is not always best," shared one employee. "Plans sometimes evolve," mentioned another.

Maybe the most disconcerting comment from the whole series of employee interviews was a statement made by an insightful woman who observed, "Delay causes enthusiasm to die." The loss of employee excitement and support for change may be one of the biggest potential costs of delay.

Discussion

Although this study was exploratory and involved only eighteen subjects, it provides some useful insights for practitioners involved in organizational change processes.

Perhaps the most fascinating learning from this study was the insight each organizational level had not only about the issues it faces, but also those faced by other organizational levels. While executives might be expected to understand the needs, fears and hopes of employees and managers, the depth of perceptive comments from employees in regard to challenges managers and executives face was unexpected. If representative, such understanding could greatly assist managers in their communication regarding delay in the change process and ultimate employee acceptance of delay as a part of organizational life.

For practicing managers, effective management of delay in the change process necessitates clear and open communication regarding the causes and effects of delay. While executives may feel the pressure to respond to political challenges, they must address operational concerns for employees if they expect continued support and performance. Communication is key to preventing delay becoming the cause of dysfunction and stress within the organization.

Conclusions

Delay is seen as a normal part of day to day existence in complex organizations. For executives, strategy evolves as internal decisions and external events flow together to create a new consensus for action. (Quinn, 1978:7) Delay is seen as a natural consequence of this proc[illegible] The delay may be caused by additional information needs or need for further dialogue with political stakeholders. While there appears to be ready acceptance of this fact of strategic life at the top of the organization, it is harder for those at lower levels to understand. Manager and employee priorities are operational. People's abilities to perform their jobs may be compromised by delay. The operational challenges faced by managers and employees confronted with delay can be substantial, affecting both productivity and morale negatively. At all levels of the organization, individuals help each other interpret the meaning of delay.

One of the first outcomes of this team was to rename the combined training function "Training and Performance Consulting." This name illustrates the recognition of our need to redesign our efforts around performance improvement from the beginning, not just satisfaction and learning, as in the past.

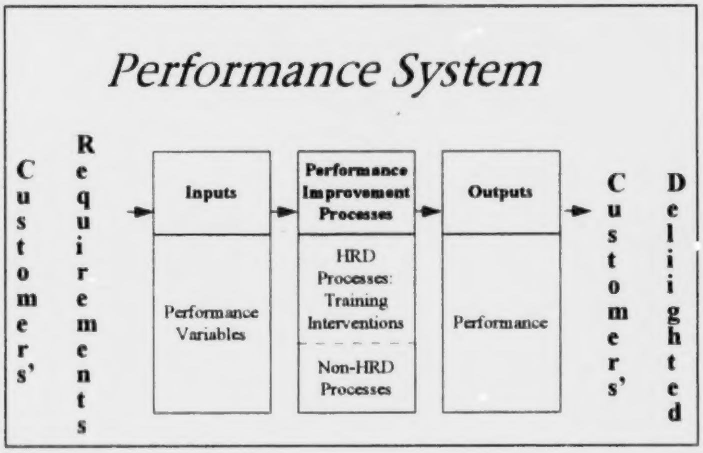
Who are our customers? In our corporation, our primary customers are first and foremost the senior management team. They control the budget, set the strategic direction and initiatives, and make the final value judgments of our efforts. The senior vice-president of each functional area has specific training and development requirements they want fulfilled. In addition, they are the leaders of significant strategic change occurring in the organization. Defining and meeting their present and future requirements is critical to every other aspect of our journey.

How do we change the mindset of this client? To some degree, our clients are unsure of what to ask for, what behavior to support, how to clearly define what it is they intuitively know they want. How do they even evaluate if they have the right people leading the effort for them? Part of our job is to build the credibility required to be successful with these people. This involves not only responding to their articulated needs, but building a relationship that allows us to redefine training as a value-added business process which is critical to their efforts.

Another customer focus includes the employees who need the training and development. In one sense, they represent our direct customer. In addition, their satisfaction is a key requirement of the senior management: the senior manager wants their people to feel as if they have the training they require to do their job. Key employee populations that impacted the strategic imperatives of increasing profitable revenue, improving customer service, and creating a winning culture were targeted as the highest priority for time and resources. Specific initiatives were developed to strengthen and enhance these employees' performance.

Our job is to help all customers understand training as a partnership between the corporate management, local management, technical experts, performance consulting, and the individual. Successfully meeting our performance objectives requires that each partner fulfill their role in supporting the desired performance.

Systems View of Performance Consulting A systems model of performance improvement means considering our external customer requirements and the performance required to delight the customer. This guided our search to identify the performance variables that impact customers, based on a performance analysis of what ways to improve our processes for impacting that performance, and considering our results. An overview of this system is outlined in the following diagram.



Where are we going?

Performance is the basis of the new training and development paradigm. Many training processes have focused on learning as well as the training side of the relationship. However, to meet the needs of the emerging organization, a performance-based approach is required. This necessitated a

Table 3
EXAMPLES OF & RESPONSES TO DELAYED ORGANIZATIONAL CHANGES

ORGANIZATIONAL LEVEL	EXAMPLE OF CHANGE	REASON FOR DELAY	PROBLEMS	FEELINGS
Employee	• Physician Hours of Work	• Operational	• Process Issues, Hard To Get Approval to Admit Patients, Communication with Physicians	• Frustrated, Anxious, Insecure
	• Added Responsibility	• Operational	• Workload Concerns, Training	• Self-Esteem, Frustration, Anxiety, Fatigue
Employee	• Purchase Centralization	• Operational	• Customer Service, Lack of Data, Lack of Policies	• Lack of Control, Incompetent, Frustrated
	• Specialized Purchasing	• Operational	• Customer Service, Delays	• Lack of Support, Frustration
Employee	• Computer Purchase	• Operational	• Inability to Do Work, Delays, Repairs on Equipment	• Frustrated, Stressed, Devalued
	• Merger	• Operational	• Lack of Support, New Processes, Communication	• Anxious Devalued, Demoralized
Employee	• Department Restructure	• Operational	• Increased Workload, Communication, Process Issue	• Frustrated, Harried
	• Compensation Program	• Operational	• Communication, Procedural, Customer Service	• Incompetent, Inadequate
Employee	• Function Restructure	• Operational	• Inability to Plan, Communication	• Vulnerable, Uneasy, Anxious
	• Department Restructure	• Operational	• Communication • Communication, Procedural, Rumors	• Concerned, Demoralized Uniformed
Employee	• Office Move	• Operational	• Inability to Plan, Communication	• Frustrated, Excited, Unsure

Table 2
EXAMPLES OF & RESPONSES TO DELAYED ORGANIZATIONAL CHANGES

ORGANIZATIONAL LEVEL	EXAMPLE OF CHANGE	REASON FOR DELAY	PROBLEMS	FEELINGS
Manager	●Downsizing	●Political	●Communication, Ambiguity Inability To Plan	●Anxiety
	●Role Change	●Political	●Inability To Plan Communication	●Excitement, Anticipation, Anxiety and Guilt
Manager	●Merger/Restructure	●Political	●Financial	●Anxiety, Anger, Frustration
	●Computer Linkage	●Operational	●Data Access, Lack of Training, Inability to Do Job	●Disillusionment, Disappointment, Powerlessness
Manager	●Merger/Restructure	●Operational	●Depersonalization, Communication	●Anxiety, Frustration, Loss of Professional Satisfaction,
	●Healthcare Reform	●Political	●Inability to Plan, Inability to Provide Quality Care	●Hopelessness
Manager	●Compensation Program Updating	●Political/ Operational	●Timeline Compressed. No Time to Plan. No time to plan Implementation	●Micro-Managed, Pressured Frustration
	●PHO Formation	●Political	●Inability to Plan	●Frustration
Manager	●Equipment Purchase	●Equipment Manufacturer	●Equipment Repair, Inability to Provide Top Quality Care, Employee Morale, Credibility Loss, Training to Soon.	●Frustration, Anger
	●Business Acquisition	●Political	●Had to Sell Idea, lack of Peer Support, Lack of VP Support	●Frustration
Manager	●Division Restructure	●Political	●Had to Sell Idea, Credibility Loss, Physician Relations	●Frustration, Ineffectiveness
	●Physician Termination	●Political	●Continuing Daily Operations, Communication, Inability to Plan	●Frustration, Anxiety

Table 1
EXAMPLES OF & RESPONSES TO DELAYED ORGANIZATIONAL CHANGES

ORGANIZATIONAL LEVEL	EXAMPLE OF CHANGE	REASON FOR DELAY	PROBLEMS	FEELINGS
Executive	•Restructure	•Political	•Board Management, Communications, PR, Physician Relations	•Anxiety
	•Downsizing	•Political	•Executive Sabotage, Board Management, Employee Relations	•Determination, Anxiety
Executive	•Merger	•Political/Operational	•Operational, Communication	•Frustration, Loss of Control
	•Purchasing Centralization	•Procedural/Political	•Customer Service, Staff Morale	•Frustration, Anger
Executive	•Psychiatry PHO	•Political	•Communication	•Frustration
	•Restructuring	•Political	•Secure Buy-In, Communication, Employee Support	•Anger
Executive	•Role Change	•Political	•Inability To Plan Role Uncertainty	•Frustration, Lowered Self Worth
	•Department Expansion	•Political	•Inability To Plan, Buy In	•Frustration
Executive	•Compensation	•Political	•Communication, Peer Relations	•Disappointment, Conflict, Frustration
	•Program Review	•Political	•Peer & CEO Relations, Communication, Employee Relations	•Frustration, Disappointment, Anxiety
Executive	•Compensation	•Political	•Communication, Peer Relations, Management Credibility	•Frustration
	•Restructure	•Political	•Program Fragmentation, Customer Service, Credibility	•Fear, Sabotaged, Unsupported

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Organizational leaders, are accountable for facilitating this process.

Many organizations today involve employees in planning change efforts. The additional support and enthusiasm for the change often generated as a result of the process may be compromised by delay. Employees experiencing delay in an organizational change mix facts with feelings in determining what the event means. (Isabella, 1990). The successful management of change inevitably includes the management of delay. Understanding and managing individual and collective reactions to delay is an integral part of leadership.

History and leadership credibility are two vital factors in the successful management of communication regarding delay. At all levels, study participants expressed a desire for clear, honest, and direct communication of the reasons for delay, next steps and their specific roles. While participants recognize the impossibility of anticipating every plan detail, they do expect competent management and see planning as a management function. Delay which is viewed as unnecessary has the potential to severely damage individual and collective management credibility.

Company survival today depends upon courage and imagination. Business leaders and employees do not question that their organizations need to change in order to be successful. The implementation of change is rarely a smooth process. Delay can cause frustration, anger and anxiety. It can have potentially serious productivity and morale ramifications. Yet it can also provide much needed time to reflect, surface new information and facilitate understanding. Proactive planning and clear, consistent communication are two key ingredients to the successful management of delay in the organizational change process.

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Journey from Satisfaction to Performance: Becoming a World-Class HRD Business Partner

Timothy R. McClernon

The training department of a large national health care company is in transition from a traditional role as a training and development support function to becoming a valued human resource development process. Evaluation of its success has changed from measuring satisfaction and learning with training received to measuring actual business performance impact. The purpose of this paper is to overview parts of this journey by sharing aspects of the transformation.

Traditionally, training and development departments have focused on improving skills, knowledge, and attitudes of individuals by measuring individuals' satisfaction and learning with training events. This has often resulted in training being viewed as an optional or wasteful activity by their business partners and clients. What is required to transform training into an equal, value-added, critical business process within the organization?

Recently having accepted a position to lead a training and development effort within a large (25,000+ employees) national company, answering this question has become a burning issue. Senior management recognized that training and development was not accomplishing the objectives required to support the organizations' aggressive growth and change requirements. Yet, they did not understand exactly how they wanted to change or develop the focus. Something new was required.

What is this something new required from the training and development department to assure the success of the organization into the future? What is training and development's role in the transformation process to make the organization's vision real? This is the journey from satisfaction training to performance improvement, from training and development to human resource development. It has been and is a process of re-engineering a new HRD vision, mission and structure and implementing the changes and actions necessary to transform training and development into an equal business partner, critical to the achievement of the organization's strategic imperatives.

The journey begins with an assessment: Where are we now? Where are we going? What are we interested in accomplishing that we have not accomplished before? Next we plan an itinerary: How are we going to make the journey? How much will it cost? What are the sights we will see? In this situation, we have already left on the journey. The questions are being asked as we are traveling. So much for planning. Who is planning this trip anyhow? Who are our travel companions? How do we pay for this journey? Do we spend our own money or do we get our money from someone else? If we embark on this journey what do our sponsors expect in return? This paper will address some of the issues faced in one organization's attempt to transform itself to meet the requirements of its business environment. Maybe this journey is about coming-of-age, of growing-up, of self-discovery, of HRD becoming an adult partner in the leadership of our organizations.

Where to start?

In this organization, the training efforts were distributed across a number of different functions and levels. A new team was formed to merge these various training activities under one umbrella: product training with sales training with technical training with operations training efforts. This new "team" has started the journey to becoming a performance-based human resource development effort. Our vision is to impact business initiatives resulting in:

- achieving customer/provider satisfaction
- dominating market share
- maximizing profitability
- promoting a culture of winning with highly motivated, well-informed, diverse associates with efficient, effective human resource development (HRD) interventions.

This vision used the language of our corporate strategic initiatives.

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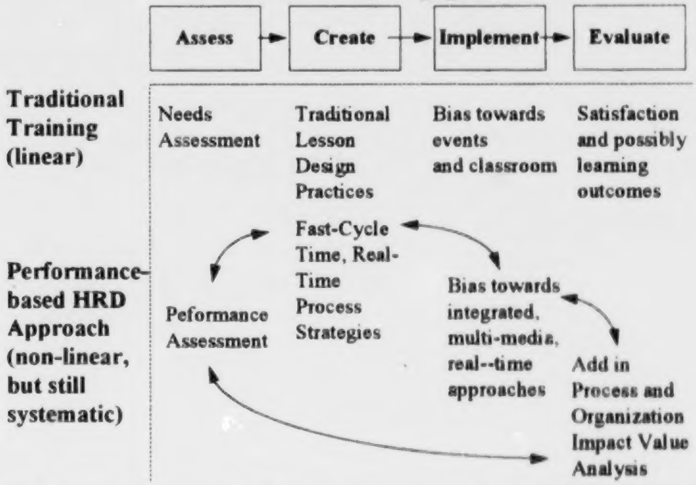

Contrasting Approaches

Assess
Create
Implement
Evaluate
Traditional Training (linear)
Needs Assessment
Traditional Lesson Design Practices
Bias towards events and classroom
Satisfaction and possibly learning outcomes
Performance-based HRD Approach (non-linear, but still systematic)
Peformance Assessment
Fast-Cycle Time, Real-Time Process Strategies
Bias towards integrated, multi-media, real--time approaches
Add in Process and Organization Impact Value Analysis

The trainer's role is moving from one of meeting planner and event-based designer to one of a business performance consultant, operating as a member of a multi-disciplined team representing home office management, field position management, compensation, recruiting, information systems, and business systems. Each person at the round table is an equal partner committed to improving performance.

A Stop on the Journey: Movement from event to process

An example of the performance-based approach to training is outlined in the following diagram showing a curriculum for new sales hires. From the beginning, the training is based on performance measures as opposed to learning objectives. This is a dynamic, if subtle difference. Performance-focused training is integrated with other aspects of the performance system, i.e., management, compensation, information tracking, quotas, etc. Satisfaction-based training is focused on how to deliver and develop the training. How does this happen?

A well-done, traditional approach to developing this training would assess the new hires training needs based on input from managers, people in the position and other sources. The outcome of the assessment would list various training objectives tied to content areas to be delivered over time. The assessment of this learning would be based on how well individuals learned the skill or knowledge addressed in each aspect of the training. An example of such an outcome, outlining at the broad level the recommended training approach to new sales hires, is shown in the following diagram:

consideration of performance-based tools such as are outlined in Analysis for Improving Performance: Tools for Diagnosing Organizations & Documenting Workplace Expertise by R. A. Swanson (1994) and Improving Performance: How to manage the white space on the organization chart by G.A. Rummler and A.P. Brache (1990). A basis for conducting a performance analysis is shown in the following diagram. The primary focus of training and development has traditionally been in the expertise/individual box. As shown in the model, many other factors affect performance. Yet, traditional training and development practices have failed to directly address the implications of these other factors, relegating them to other functions within the organization. If we expect managers and employees to assume a partnership role in training efforts, it is time for human resource professionals to assume a partnership role in non-training efforts.

Performance Analysis Matrix

Performance Variables ⇓	Performance Levels ⇓		
	Org.	**Process**	**Ind.**
Mission/ Goals			
Systems and Tools			
Capacity			
Motivation			
Expertise			

(based on Swanson, 1994)

How are we going to make the journey?

What does it mean to run a performance improvement team versus a training and development department? It means a redefining of our role in understanding the business as well as re-engineering of our internal processes. It means having an approach to our work grounding in a theory-based approach. Our work should be based on submitting our efforts to the rigor of scientific inquiry and to test its impact and results.

We have been redefining how to balance the use of external and internal resources. Due to time constraints requiring short term results, we are developing strategic partnerships with key vendors, rather than only building internal capabilities. We are not just buying programs, we are building relationships so that vendors begin to operate much as internal resources would operate: knowing the business, customizing applications, assisting in scheduling and evaluation efforts.

We have been developing strategic partnerships with external sources for providing distance learning and computer-based training. Breakthroughs in technology provide a basis for creating more real-time, cost-effective approaches to each of the traditional aspects of training: assessment, design, development, implementation, and evaluation. One of the key questions we focus on is how to re-engineer the training process to meet the current organization's performance requirements. For example, traditional needs assessment processes fail to provide data required for a broader performance-based approach. Often, traditional needs assessment approaches required the application of fast-cycle time technologies to be completed in a realistic time frame. The following diagram provides a framework in which to assess the capabilities required for the newly designed performance consulting team. Already we have crunched design and development into a single creation phase. In real life, the linear model is dynamically applied resulting in parallel activities. Caution is required such that assessment and evaluation are not simply removed from the process in an attempt to speed it up.

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Proposed Training Process for New Sales Hires

Phase 1: Basic Training (1 month) *Competency Areas:*	Phase 2: Field Training (2-3 months) *Competency Areas:*	Phase 3: Knowledge/ Skills Enhancement (6 months) *Competency Areas:*
Product Knowledge: Approach	Product Knowledge: Approach and Features/Benefits	Product Knowledge: Operations and Internal Processes
Company Knowledge	More Company Knowledge	More Company Knowledge
Marketing Techniques	Compensation and Activity Planning	More Activity Planning
Sales Process: Steps 1 & 2-Qualifying and Interviewing	Sales Process: Steps 2 to 4: Interviewing, Presenting and Closing	Sales Process: Entire Process

What are the assumptions driving this process and outcome? Fundamentally, I believe this outcome is produced out of the mindset of a training department focused on providing satisfaction and learning. Most likely it is also the mindset of the clients (people receiving the training and managers). This is not bad, indeed if it is done well, represents a major improvement for much of the training delivered in today's organizations.

How would a performance-based HRD professional approach this same situation? The initial focus would be on sales performance and the sales activities influencing that performance. Next he or she would attempt to understand how information collection systems, management approaches, compensation systems, and external marketing factors influence this performance. Then, as a business partner, he or she would create a training process designed around this profound knowledge of the new sales hires' performance that integrates all aspects of the factors influencing performance. An example of this approach is outlined in the following diagram.

As an individual enters the organization, he or she will receive training on an ongoing basis. The first twelve months of this training is outlined in the following diagram, much as in the first approach. To continue in their position as well as to continue receiving a training investment, new hires are required to achieve certain measurable performance outcomes (the second line in the diagram). These performance measures are the minimum requirements necessary to continue in the position and not be fired. In addition, they are the factors the managers use for developing and monitoring new sales hires' activities on the job. This is in contrast to beginning with the required competencies, intuitively suggesting that they are based on unspecified performance requirements as done in a more traditional approach.

Training is outlined by focusing on the partnership between the individual, manager, and home office roles in the development process. The process as well as the delivery method is built on the individual owning and directing their own progress.

Even the time frame outlined at the top is only a guideline. As the program is internally built on the demonstration of competencies through performance, time on the job is less a factor than progressing through demonstrating competencies. If appropriate delivery methods and schedules are created, an individual could progress as fast as they desire through the performance-based system. Experienced individuals achieve or surpass quotas faster.

Another aspect of this performance-based program is the use of guides. The guides provide a total "bible" or reference source of information, skills and resources required for success during the new person's first year on the job. They serve as a road map for achieving the performance desired.

The guides suggest self-study, activity-based, computer-based, and video-based activities for the new sales hire's development. By using the guides to direct knowledge acquisition using self-study and local in-office resources, more expensive, face-to-face group training can focus on skill development and practice. The manager's guides specify the manager's role and responsibilities in supporting, reviewing, and assessing the new hire's progress.

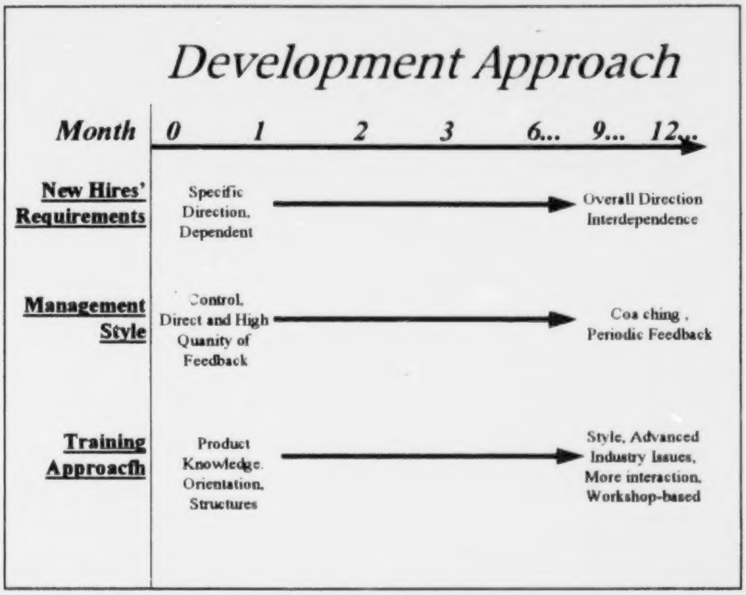
New Hire Sales Training Process

Performance Criteria	Get License	# cold calls # apts. # prop's	# cold calls # apts. # prop's	50% quota	85% quota
Aprox. Time in mo.'s	0	1	2	3	6... 9... 12...
Individual Self-Study	Prework Guide	Guide 1	Guide 2	Guide 3	
Managers' Activites	Mgr. Prework Guide	Mgr.'s Guide 1	Mgr.'s Guide 2	Mgr.'s Guide 3	
Home Office Training		Basics: Selling Skills & Products	Intermediate Selling Skills & Advanced Knowledge	Advanced Client Interaction Skills	

Critical to the success of creating a performance-based human resources effort is re-defining the role of a trainer into one of performance consultant and business partner. A business partner is someone committed to bottom-line results and is a student of the business, processes, and market factors impacting results. A performance consultant means understanding the important factors affecting performance at the organization, process and individual levels.

Performing an in-depth performance analysis will greatly assist human resource professionals in creating the credibility they seek in working as an equal with other business partners. An outcome of this example was the creation of a performance-based management system that influenced behavioral-based hiring guidelines, compensation, data-collection at the local and corporate levels, and a "backbone" for developing and implementing the training process for managers, existing employees, and new hires. During the performance analysis, key activities were identified that influence the primary outcome of sold cases: prospecting, initial appointments, collecting information to deliver proposals, presenting proposals, following-up to close proposals delivered, internal implementation of a sold account, and enrollment. Observable and measurable data can be collected to assess the effectiveness and quantity of each of these activities. This became the common thread linking each of the partners supporting the selling process. Imagine the value attributed to the human resource professional who received much of the credit for creating this simplified approach to performance management. That is what it means to become a business partner.

In addition to basing the training on a performance management system, a development approach is incorporated into the training curriculum design. As a new hire moves through the process, developmental needs change. The style of the manager as well as the needs of the individual change, requiring different human resource development methods and tools. Initially, the new hire needs considerable control and direction, which decrease over time. A performance-based manager can adjust accordingly. The training changes from an initial directive, scripted, simple basics approach, to focusing on a more versatile, individual- style, advanced concepts approach. This is outlined in the following diagram.


Development Approach
Month
0
1
2
3
6...
9...
12...
New Hires' Requirements
Specific Direction, Dependent
Overall Direction Interdependence
Management Style
Control, Direct and High Quanity of Feedback
Coaching, Periodic Feedback
Training Approacfh
Product Knowledge, Orientation, Structures
Style, Advanced Industry Issues, More interaction, Workshop-based

Implications of the performance-system were used to create and improve the training process for existing sales people and leadership development for the managers.

Evaluation and Value Analysis

Because of the focus on performance variables from the beginning, it is easier to assess the value of HRD on outcomes. Traditional measures of satisfaction and learning at the individual level are still important. Unsatisfied clients and trainees would still be a problem in a performance-based approach. What is key to a performance-based system is that the performance impact be assessed at the process and organization levels as well.

Conclusion

Some of the changes involved in the journey from a satisfaction-based training department to becoming a performance-based human resource development team are summarized in the following table.

Satisfaction-based Training	*Performance-based HRD*
Training and development department	Human resource development process
Learning Objectives	Performance objectives
Trainee focus	Organization's bottom-line focus
Needs assessment (focused on training needs)	Performance assessment (focused on variables affecting business results)
Satisfaction, measures, possible learning measures	Organizational financial impact measures
Trainer	Performance improvement consultant
Trainee	Performer
Continuous Process Improvement	Process Re-engineering
Large internal training department	Strategic external partnerships for key projects and capabilities
Continual change	Transformation
Traditional training models, processes	Real-time, fast-cycle time training models and processes
Events	Self-directed on-the-job learning approaches over time
Training's role	Partnership between individual, management and performance improvement team
Bias towards classroom style training	Bias towards new technologies allowing self-paced, real-time, on-the-job development
Primary focus on individual trainee	Integrated curriculum addressing performance team: manager, performer, and operations partners

We are just beginning to become a performance-based human resources development team. As we inquire into what it means to improve our training and development efforts, we are convinced that it is based on a re-engineering of our internal process as described. The implications of our efforts are influencing every aspect of this sales effort. Our journey has meant going beyond the satisfaction-based and learning-based approaches we used in the past. It promises to be an exciting journey in which HRD is viewed and treated as an important value-added business process accountable for producing bottom-line results.

Return on Investment -- Beyond the Four Levels!

Jack Phillips
Middle Tennessee State University

The Kirkpatrick model of four levels of evaluation has served the HRD profession for over 35 years. While it has been accepted by practitioners all around the globe, it has also been criticized and alternative models have been offered. With today's need for HRD accountability and the growing importance of showing cost vs. benefits, the Kirkpatrick model appears to be limited. A modification to this model, a five level framework, offers a more appropriate and acceptable framework for HRD evaluation.

The HRD profession and the climate in which the profession is practiced has changed significantly in the 35 years since Kirkpatrick developed his four levels for evaluating training programs (Kirkpatrick, 1959a; 1959b; 1960a; 1960b). At the time of its development, the framework provided an ingenious way to sort through the maze of evaluation problems facing training practitioners at that time. There was a void of useful models to help the practitioners tackle this important issue. The four level framework was well received and has since been the model of choice for the practitioners (Kaufman and Keller, 1994). It has enjoyed widespread use and has a reputation throughout the world as a logical, practical, and useful framework to pursue evaluation (Bramley and Kitson, 1994). With the growth of HRD and the growing importance of the function, adjustments that are necessary in the model to make it more useful and practical for today's practitioners while at the same time addressing some of the concerns about the approach.

The Basic Model

The Four Levels. In 1959 Kirkpatrick proposed four levels of evaluation for training, as shown in Figure 1.

Figure 1. Kirkpatrick's Four Levels of Evaluation with Original Definitions.

	Level	Question
1.	Reaction	How well do the trainees like the program?
2.	Learning	What principles, facts and techniques did the conferees understand and absorb?
3.	Behavior	Did the trainees change their on-the-job behavior?
4.	Results	What results were obtained?

Kirkpatrick's original model was narrowly focused, deviating very little from the literal definition of the above steps. Although the basic model has not been modified in later presentations, Kirkpatrick began to broaden some of the concepts and definitions in later years (Kirkpatrick, 1994). Perhaps this was a result of criticisms of the model from both the practitioners and researchers.

Research on the Levels. There has been a tremendous amount of research undertaken to test Kirkpatrick's model and to examine relationships within the four levels. Alliger and Janak (1989) identified three problematic assumptions about the Kirkpatrick model: (1) The levels are arranged in ascending order of information provided. (2) The levels are causally linked. (3) The levels are positively intercorrelated. Their study examined the validity of these assumptions, the frequency of each level in published evaluation studies, correlations from the literature in regard

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to Assumptions 2 and 3, and implications for the researcher and training manager. Collectively they examined over 200 studies and found little support for the assumptions. Kaufman and Keller (1994) compared the Kirkpatrick framework to five levels of critical organizational concern and evaluation and offered an adjusted model.

Acceptance of the Model. Acceptance of the model has been widescale, particularly with practitioners. The model provided a useful, understandable, and practical way in which practitioners could evaluate their programs. The extent to which practitioners have utilized the concept is impressive (Moseley and Larson, 1994; Veech, 1994; Krein and Weldon, 1994). The four level model provides a reference for many current studies about evaluation. For example, the latest Industry Report from Training Magazine provided data on the extent to which companies use the four levels in their evaluation plans (Who's Learning What?, 1994). This report, shown in part in Table 1, reveals the widespread adoption of the four levels and the significant use at each level.

Table 1. Status of Training Evaluation - All Industries.

	Percent Measuring At	Percent of Courses
Level 1	83	79
Level 2	66	45
Level 3	62	45
Level 4	47	44

Another major effort involving a search for best practices, the American Society for Training and Development launched a benchmarking forum in 1992 (Kimmerling, 1993). Measurement and evaluation is one of the four key areas of initial investigation with this group. The participants in the forum present data by level of evaluation using Kirkpatrick's model.

The four level system has become a standard reference for articles and reports on evaluation (Shelton and Alliger, 1993; Altizer, 1994; Veech, 1994). In workshops outside the U.S., I can count on at least half of the participants to have some familiarity with the Kirkpatrick four level scheme. It has become the most widespread and commonly used model among practitioners.

Problems with the Kirkpatrick Model

Although the model has endured widespread use among practitioners, it is the subject of review and critique among researchers (Fitz-enz, 1994; Kaufman and Keller, 1994; Alliger and Janak, 1989). More recently, practitioners have questioned the limitations of the model (Marshall and Schriver, 1994; Bushnell, 1990). The concerns involve four major areas.

Linkages Between Levels. The model is based on assumptions that there was a linkage between the different levels. (i.e., when a participant enjoyed the program, learning would occur; when there was learning, there would be on-the-job behavior change; when there was behavior change, there would be results.) Unfortunately, these linkages do not exist or are not very strong (Alliger and Janak, 1989). There is considerable evidence that suggests that positive reactions at the end of a program do not necessarily correlate with learning (Dixon, 1990). Also, many research studies on transfer of training have shown that while participants may learn the material, there are many legitimate reasons why it does not appear as behavior changes on-the-job (Broad and Newstrom, 1992).

Definitions. Kirkpatrick's model was limited in its definition of levels one, two, and three. In the basic model, level one focuses on how well the trainees "linked a particular training program," a very narrow view (Kirkpatrick, 1959a). There are other important elements that could be included at this level including resources, efficiency and planned actions. At level two, Kirkpatrick defined learning as "principles, facts, and techniques...understood and absorbed by the conferees" (Kirkpatrick, 1959b). This is rather limited and should be expanded to include knowledge, skills, and attitudes. At level three, the term behavior change is limiting. Although most training brings about a change in behavior, there are other times when training causes the acquisition of knowledge or changes in attitudes which may not appear as observable behavioral change. Because of this, the definition of behavior needs to be broadened to indicate any on-the-job applications of the training or learning material to produce needed changes.

Accountability. Originally Kirkpatrick's level four focused on results. He stated that training should cause measurable changes in improved productivity or quality, reduced absenteeism and turnover, or a variety of results at the work unit, department, division, or organizational level (Kirkpatrick, 1960b). The initial focus of the level four evaluation was on monitoring these output variables to observe changes after the training program was conducted. (i.e., productivity increased by 10% six months after the training program was conducted or absenteeism was reduced by 15% three months after the program.)

In terms of the value of the data collected, this approach has two limitations. First, the results were not converted to dollar values. There is a need to understand and account for the value of an improvement (Fitz-enz, 1994). For example, top management may want or need to know the value of a 15% reduction in absenteeism. This requires organizations to place values on all types of training program results. Thus, a value added component is needed.

The second limitation is the absence of training costs. For a complete evaluation the cost of the program must be compared with the actual value derived (Marrelli, 1993a). In too many cases, the results of a training program, although moving in the right direction, did not add enough value to cover its costs (Altizer, 1994; Rust, Zahorik, and Keiningham, 1994). As a result, many programs evaluated at level four escaped the true accountability of comparing the net benefits of the program with all of the costs of the program. In later versions of Kirkpatrick's model, the concept of cost/benefit analysis was discussed as "one way to measure the results" (Kirkpatrick, 1983). This confuses practitioners since a cost/benefit analysis is a different level of evaluation when compared to tracking results such as productivity and quality improvements. Most practitioners have omitted the cost component with the assumption that they are tracking level four performance data.

Isolating the Effects of Training. Earlier versions of Kirkpatrick's model paid little attention to the various ways of isolating the effects of training, which is an important part of level three and four evaluations. In almost every training program where improvement is documented with on-the-job behavior change or results, there were other influences or factors which contributed to those results (Davidove, 1993). Few cases exist where training is the only input variable which has an influence on an output variable during the timeframe of a training program. Therefore, an important and essential ingredient of any evaluation effort must be a deliberate attempt to isolate the effects of training.

In the initial presentation of the model, Kirkpatrick stated that for an evaluation at level three, a control group was needed to determine the amount of behavior change (Kirkpatrick, 1960a). Yet, some of the studies used to illustrate the point did not use a control group. In reality, there are many ways to isolate the effect of training (Davidove, 1993). One recent report identified ten strategies to isolate the effects of training (Phillips, 1995). This issue must be addressed at level four as well as level three although it is probably assumed that controlling at level three will address the issue at level four. Without proper attention to this issue at both level three and four, training will improperly take credit for any improvement and the evaluation will lose considerable credibility.

Return on Investment - The Trend Continues

In any direction one chooses to take in the HRD field, the pressure to measure the return on investment (ROI) is increasing. In developing countries as in fully developed nations, the issue is a hot topic among HRD professionals. At some time or another, virtually every organization will face this important issue. The pressure to measure the results from training may come from line managers, the internal customers of HRD who must support HRD, or from top executives who must allocate resources to those functions in the organization that are contributing to the bottom line (McIntosh, Page and Hall, 1993). Seven important trends, summarized below, are visible on the HRD horizon which collectively provide important evidence of the pressure for increased use of ROI.

Training and Development Budgets Are Increasing. There is clear evidence of the increase in training and development budgets. In the United States, budgets for 1993 were up 7 percent over 1992, and the number of individuals trained increased 15 percent, one of the largest increases in recent history (Industry Report, 1993). In 1994, the trend continued with a 5 percent increase to $50.6 billion (Industry Report, 1994). Budgets are also increasing in other countries, particularly where training expenditures are tied to government legislation..

As budgets increase, so does the need for accountability. It is important for business to evaluate HRD programs as other large investments are evaluated - in terms of the costs and benefits (Mosier, 1990). Also, large (and growing) budgets become big targets for critics. When HRD receives significant funding increases, it is usually at the expense of other parts of the organization not receiving similar increases. When this continues, the HRD budget will be a target of people who question its existence or its ability to enhance organizational effectiveness. This situation creates pressure on the HRD staff to show that the function is achieving results in the language that top management understands, ROI.

HRD is Linked to Competitive Strategies. Many organizations are utilizing HRD as a competitive weapon to create a distinct strategic advantage. In some situations, training is seen as the most critical competitive weapon (Sloman, 1994). Whether the organization is experiencing tremendous growth, restructuring, right-sizing, or changing markets and locations, training is seen as an important vehicle to implement these changes. HRD has become a powerful change management tool to help organizations successfully meet the challenges of the future. Ambitious HRD efforts, linked with competitive strategies enable organizations to increase market share, introduce new products, improve delivery and customer service, reduce cost, become more efficient, improve response times, and increase productivity (Pulley, 1994). When training takes on a highly visible role, such as implementing parts of the strategic plan, there is more pressure for accountability. Top executives and other significant groups want to ensure that all competitive tools are accountable and measurable.

ROI Failure in Organizational Change Efforts. Many organizational change efforts which have significant HRD efforts as part of the process have failed because the results did not offset the costs. While some of these programs, such as Total Quality Management (TQM), have produced results, they do not pass the ROI test when values are placed on the added benefits of the program, and compared to the costs for the program (Rust, Zahorik and Keiningham, 1994). As a result, many current organizational change programs, including reengineering and restructuring, have become questionable because of the lack of ROI accountability built into the process (McElrath-Slade, 1994). Consequently, top management in many organizations are beginning to demand a forecast of ROI before pursuing those programs (Thornburg, 1992).

Accountability of All Functions Is Increasing. Virtually every function in an organization is being subjected to increased demands for accountability. Functions previously taken for granted as necessary and unmeasurable (e.g., public relations) are now required to show a contribution. This is particularly true for staff support functions. Even internal auditors, who several years ago never dreamed of being held accountable for their success, are now adapting measurement processes and in some cases turning audit functions into profit centers. In this respect, HRD is just one of many functions responding to pressures to show their contribution in measurable terms, such as ROI.

Top Executives Require ROI Information. Chief executives, struggling to make their organizations lean, profitable, and viable, are demanding accountability with all expenditures. They are encouraging, and sometimes requiring, the HRD staff to measure ROI (McCune, 1994). In some cases, executives issue ultimatums to show the value of HRD or take a budget cut, as it occurred at IBM (Gallagan, 1989). In other cases, top executives use subtle hints and suggestions. In an editorial, one of the largest associations for top managers recently recommended that

Level five evaluation requires the addition of two important and necessary steps. The first step is the conversion of the results tabulated in level four to a monetary value to be used in an ROI formula. This requires a direct conversion of hard data such as quantity, quality, cost, or time which can be relatively easy for some programs such as technical training (Reynolds, 1993). For soft data, the task is more difficult, although a variety of techniques are utilized to place values on the improvements. Table 2 shows a range of approaches.

Table 2. Techniques for converting soft data to monetary values.

- Participant Estimation
- Supervisor Estimation
- Management Estimation
- HRD Staff Estimation.
- Historical Costs
- Expert Opinion
- External Studies

Estimating values can be a reliable and accurate method for placing values on training data (Marrelli, 1993b). Even soft, interpersonal skills training can be evaluated in dollar-and-cents terms (Fitz-enz, 1994).

The second step involves the calculation of the costs for the program. Although there has always been a need to capture training costs, the need is greater with the pressure for ROI. Unfortunately costs are not clearly defined or pursued in many organizations. The addition of this step will focus more attention on accountability and require organizations to develop costs as they move to the fifth level, the ultimate level of evaluation.

With this process, HRD professionals must develop an evaluation strategy and make a deliberate attempt to move through the chain of evaluation levels up to and including the fifth level. In some cases, the evaluation may stop at level one or two. In others, evaluation may be conducted at level three with no evaluation at level four. Still, in other cases, a level four evaluation may be developed without a level five evaluation. And, finally, level five would show the ultimate evaluation. The movement up the chain depends on the type of program, management's interest in higher level evaluation, and the resources available for evaluation. Some organizations develop targets for each level (Phillips, 1994).

This model has several minor adjustments from Kirkpatrick's model which increase its likelihood of success. Reaction at level one in Kirkpatrick's model is changed to reaction and planned action. Because training transfer is such an important issue, it is helpful to include efforts to enhance the possibility of transfer. Requiring participants to outline how they plan to use what they have learned assists in the transfer of training (Broad and Newstrom, 1992). In addition, information on planned actions can provide insightful information on how participants have internalized the material and plan to utilize it. Also, if a follow-up is scheduled, the planned actions serve as a basis from which to compare progress. At level two, the definition of learning is broadened to specifically include knowledge, skills, and attitude. At level three, another adjustment is made in the use of on-the-job applications instead on behavior change. This implies that participants may have changes in knowledge, skills, and attitudes which could be applied in any combination to improve the situation at the work place. It is not strictly confined to behavioral changes. Finally, level four is changed to business results to reflect the need to present results in a form that top management expect and understand.

In workshops where this model has been presented, the reaction with practitioners has been overwhelming. In a sample of 285 practitioners in the U.S.A. and Canada, 98 percent preferred this modified model to the four level model of Kirkpatrick. The other two percent had no opinion. Some workshop participants indicated that the introduction, explanation, and application of this new model was one of the most important parts of the seminar on calculating the return on investment in training. In addition to the United States and Canada, this model has been introduced in Mexico, Venzuela, Australia, Indonesia, Malaysia, and Singapore. The reaction in all cultures parallel those of the U.S. and Canada, an overwhelming acceptance of the modified approach.

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executives require a calculation of the return on investment in training and development (Fagiano, 1994).

Global Interest in ROI. All around the globe there appears to be significant emphasis on ROI as an important topic for HRD practitioners (McCune, 1994). A recent study of 35 organizations, all members of the International Federation of Training and Development Organizations, showed that among the topics of interest to the members, ROI ranked at the top. Interest in ROI appears to be motivated by different purposes. In mature economies such as the United States and Europe, ROI is pursued to see if HRD funding levels should continue or be increased. In developing nations, such as Malaysia and Indonesia, the ROI is being utilized to determine which types of training programs provide the most return for the organization. In those countries, there is little interest in reducing the funding levels, as there might be in other countries.

Practitioners' Interest in ROI. In all types of organizations, practitioners are beginning to develop a sense of accountability for their programs. In an attempt to become a business partner and contribute to the organizational goals, practitioners are seeking techniques and methods to show the worth and contribution of their programs, and the ROI appears to hold the most promise for this goal (Swanson, 1993). Financial analysis can be a valuable tool for HRD managers who must justify investments in various programs. The same applications used to justify investment in capital, land, or other resources can be used to justify training and development on the basis of improved productivity and profitability (Mosier, 1990, p. 49).

Results from practitioners are impressive. Kraft General Foods reports an average of $6,000 value added per student per course (Noonan, 1993). Motorola reported a $33 return for every dollar spent for quality and process training in selected plants (Wiggenhorn, 1990). Magnavox netted 741% ROI in a literacy training program while Yellow Freight Systems claims 1,115% ROI on a HRD program in performance management (Phillips, 1994, p. 102 and 266). Skill Dynamics, an IBM subsidiary, reported a 259% ROI in a training program for service representatives (Shelton and Alliger, 1993).

Recently, the American Society for Training and Development, clearly the world's largest organization for HRD practitioners, initiated a new case study series, **In Action**, designed to present real world applications of significant issues in HRD. Although approximately 30 titles are planned, the first title focused on **Measuring Return on Investment** (Phillips, 1994). This was considered one of the most important issues facing practitioners today. The response was so positive that a Volume II of the title is planned.

A New Model

The limitations of the Kirkpatrick model, and the concern for more attention to ROI, has led to the development of a modified version of Kirkpatrick's model, depicted in Figure 2.

Figure 2. Five Levels of Evaluation.

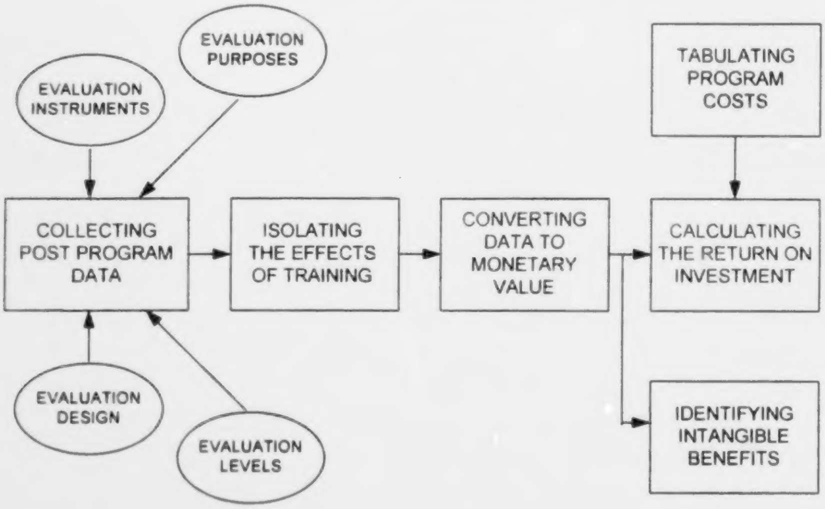
	Level	Question
1.	Reaction & Planned Action	What are participants' reaction to the program and what do they plan to do with the material?
2.	Learning	What skills, knowledge, or attitudes have changed and by how much?
3.	Job Applications	Did participants apply on-the-job what they learned?
4.	Business Results	Did the on-the-job application produce measurable results?
5.	Return on Investment	Did the monetary value of the results exceed the cost for the program?

The primary modification is the addition of the fifth level, which focuses on the return on investment. The other four levels are very similar to Kirkpatrick's with some minor changes.

The ROI Analysis

Any framework for evaluation must include a complete description of the process within which the evaluation data is fully developed and analyzed. For example, the issue of isolating the effects of training must be addressed as the model is implemented in practice. When level five evaluation is pursued, the ROI process, shown in Figure 3, is recommended.

Figure 3. ROI Model.


EVALUATION PURPOSES
EVALUATION INSTRUMENTS
TABULATING PROGRAM COSTS
COLLECTING POST PROGRAM DATA
ISOLATING THE EFFECTS OF TRAINING
CONVERTING DATA TO MONETARY VALUE
CALCULATING THE RETURN ON INVESTMENT
EVALUATION DESIGN
EVALUATION LEVELS
IDENTIFYING INTANGIBLE BENEFITS

The evaluation levels are combined with other important evaluation elements such as purposes, instruments, and designs, to include an overall data collection scheme. After the data is collected, the ROI analysis begins with deliberate attempts to isolate the effects of training on the data items. As shown in Table 3, at least ten strategies have been utilized:

Table 3. Methods to isolate the effects of training.

- Use of Control Groups
- Trend Line Analysis (Time Series)
- Forecasting Methods
- Participant Estimation of Training Impact
- Supervisor Estimates of the Impact of Training
- Management's Estimate of Training's Impact
- Customer Input
- Expert Estimation of training Impact
- Subordinate Input on Training's Impact
- Calculating/Estimating the Impact of Other Factors

The next step is the conversion of the data to monetary values, a process briefly described earlier. Costs are developed and are compared to the monetary value of the benefits to develop the ROI calculation. The ROI formula becomes net program benefits divided by program costs where the net benefits is the monetary value of the benefits minus the costs of the program. This model also recognizes the fact that there should be intangible benefits that will be presented along with the ROI calculation.

Conclusion

In conclusion, Kirkpatrick's model has served the HRD field admirably for over 35 years. With the pressure on HRD professionals today, it is time to make some modifications of the model. Rather than develop a completely new model, as some have suggested, it is best to build on one which has achieved widespread acceptance and adoption. This new approach, a five level model with an ROI process, updates and enhances the Kirkpatrick model. This new approach has been received very well in early introductions, particularly when it is presented in the context of a model in which the ROI calculations are developed.

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Interpreting a Compact Cost/Benefit Analysis that Assesses the Performance Value of Training

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Evidence that training actually enhances productivity of workers and improves the "bottom line" of businesses is often hard to obtain. A need exists for a method of showing training effectiveness that is not very time consuming and detailed, yet delivers compelling results in terms that managers understand. This paper examines the procedure suggested by Godkewitsch, and recommended by ASTD, for its practical significance. The results clarified a method that uses norm-reference information to calculate the performance value in dollars, and at the same time is conceptually reasonable and easy to apply to many situations whose norm-reference information is available.

Trainers are often plagued by demands that they produce evidence to support the productivity of the training enterprise. Sometimes this evidence must come from an analysis of the effectiveness of training. What we need is a method of demonstrating the justification of training that provides documentary evidence of effectiveness and delivers results in terms that managers know and understand. Probably the best way to do this is to use dollar value for the training activities that have been conducted. Managers may understand a dollar-based accounting for the value of training and may be convinced that training initiatives are worth the investment of additional dollars. Techniques for doing this are most often known as cost/benefit analysis, and they are often thought to be overly lengthy, detailed, and ponderous. However, simpler methods do exist for calculating the dollar value of training. One method (Brauchle, 1992) partitions each job into significant tasks and assigns values for the task's difficulty, importance, and frequency. The individual's performance on the task is determined and performance values are calculated before and after training. Performance gain is then determined for each task and for the job as a whole.

While this method is easier than most, the trainer may need to show training effectiveness with equal precision but with less detail. Thus, the need for a more "compact" method. This paper will describe a simple technique that considers larger components of jobs and uses fewer variables, but provides similar data. Because it is shorter and more direct, it may be called a "compact" cost/benefit analysis.

With this method, job performance is measured after training by means of supervisor's rating (or other means), and, by using a norm reference, value is assigned to the gain in job performance and the dollar benefits the training produced are calculated. This procedure is based on the method Godkewitsch (1987) used, later published by ASTD in INFO-LINE publication #007, entitled "How to Conduct a Cost-Benefit Analysis" (1990). This method of cost/benefit analysis defines benefit as the effect of the training times the value of the training minus the cost of the training times the number of people who have been trained. The formula is $B = N[(E \times V) - C]$ (more about that later). The result is a dollar value that describes what the training is worth to the organization in terms of the performance of the workers who have participated in the training.

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Using dollars to describe the benefits of training has several advantages: (1) The dollar is a ratio measure of value; (2) The dollar has tremendous emotional appeal; and (3) It is the same measure that is used for the rest of the business.

Cost/Benefit Analysis in Perspective

Kirkpatrick (1975) proposed 4 levels of evaluation: (1) Reaction Level, (2) Learning Level, (3) Behavior Level, and (4) Results Level. The present analysis is conducted at the behavior level. It measures trainee performance after training and compares it with a standard. True, the analysis could be conducted at the learning level. However, that would make the results less powerful, since measures of productivity gain seems to have greater value in most organizations than gains in learning.

The Problem

Godkewitsch's formula, presented in his 1987 article, and reporduced in the ASTD INFOLINE Publication, was so poorly explained that neither the author of this paper nor the ASTD editor could clearly understand why it was supposed to yield a usable performance value. In thier explanation, the ASTD publication asked us to "Assume that the effect of the training (E) was .44 of the standard deviation of the 'before-and-after-training' change (established by management) (p. 13). What does this mean? Does management establish the change? Do they establish what .44 percent of the standard deviation of the change is? Why use standard deviations at all if the criteria were established by management? They go on to say that the "average salary of the trainees is $230 a day or $59,800, and monetary value of the standard deviation of job performance management decides is 40 percent of yearly salary or $23,920 (p.13). Why did management decide it was 40 percent of yearly salary? Could it just as easily be 30 percent, or even 70 percent? Is there no decision rule for the value of performance gain that explains *why* 40 percent is used?

Method

To answer these questions Godkewitsch's 1987 artcle was examined. This, too, was found to have insufficient detail, but led to an original article on the subject, published in the 1986 *Journal of Applied Psychology*, by Burke & Day. The Burke and Day article contained the one essential piece of information which made Godkewitsch's formula understand able by giving it a useful reference point to establish the dollar value of the effect of training. The essential information concerns the expression of performance gain in terms of unit normal curve deviates; specifically, what is the dollar value of an increase in performance that equals 1.0 standard deviation, and why it is permissible to use that value, in the absence of other baseline information. With this information in hand it was possible to construct the following cost/benefit analysis.

Five Steps to Benefit Analysis

The steps to benefit analysis by this method are: (1) Determine the effect of the training, (2) Determine the dollar value of the effect, (3) Find out how may people have been trained, (4) Determine the training cost per person, and (5) Put the information together. Let's try it on a sample problem.

A Sample Problem for Analysis

Suppose we train 25 persons in an important technical skill needed by the organization. The average salary of these trainees is $24,000 per year. The training was out-sourced off site and we had to pay for tuition, travel, living cost, and pro-rated salary. We have an itemized list of the training costs. After training, we obtained a supervisor's rating of job proficiency for each of the trainees and concluded that the training increased job proficiency by .42 Standard Deviations in the trained group. The question is: What is the financial benefit of this training?

Step 1: Determine the Effect of the Training

For this step, you need to find what has been the effect of the training and describe it in standard deviation units. For this step, use the distribution of job performance that persons in that job have displayed in the past. It will form the familiar bell-shaped curve, with a mean and a standard deviation. Now, calculate the average performance of your group after training and compare it with the typical job performance average, using standard deviation units. In our example, we have increased the average performance .42 standard deviations.

Measuring Job Performance.

In this example, we measured job performance by using the supervisor's evaluation. There are other ways, such as peer or colleague evaluations, observation of the person on the job using a checklist for desired behavior, and measurement of productivity (units produced per person per unit of time). Each has its pros and cons. The trainer must choose the best one.

Step 2: Find the Dollar Value of the Effect

In a meta-analysis of studies, (Burke and Day 1986) found that one standard deviation of improvement in productivity was worth an average of 40 percent of pay for the job. Thus, if an group improved 1 standard deviation after training, their performance is worth 140% of wage level to the company. Conversely, if it decreased 1 Sd, the performance value is worth 40% *less* than the wage level. Since we don't have any benchmarks for our particular company, we can use average figures, and find the dollar value of the effect by multiplying the annual salary by .40. The effect of our training is therefore $24,000 x .40, or $9,600.

Step 3: Determine how many People were Trained

This step is simple. We have but to count the number of persons who were trained. In our example, we trained 25 workers.

Step 4: Find the Training Cost Per Person

Finding the training cost per person is not difficult. Because we out-sourced the training, costs are readily available. We know that tuition cost was $1,200, travel $525, and living expenses $577, but how do we get the pro-rated salary for the 5 days the workers were in training?

We have the average wage of $24,000 per year and can assume 25% fringe benefits. We can also assume that we want to use full labor costs at 260 days per year (see the ASTD INFO-LINE previously cited). So, $24,000 x .25 = $6,000, which,when added back to the $24,000 salary, gives $30,000 in full labor costs. The $30,000 divided by 260 days is $115.38 per day, which, when divided by 8 gives $14.42 per hour. Our training program lasted 5 days, so the pro-rated salary cost is $14.42 x 8 hours x 5 days, or $576.80. Let's round it off to $577 for convenience. After adding $577 to the other costs, we find that the training cost per individual was $2,502.

Step 5: Put it All Together

All we have to do now is put the information into the formula and turn the crank (I promised we'd get back to that).

Using the formula B = N [(E x V) - C], we get:
B = 25 [(.42 x 9,600) - 2,502] B = 25 [4,032 - 2,502] B = 25 [1,530] B = $38,250

This means that our training program had a benefit of thirty eight thousand two hundred and fifty dollars (it sounds like more if you say it that way). Still, $38,250 is a nice piece of change!

Advantages of this Method

The cost benefit analysis method just described has several advantages: (1) It uses dollars as the unit of measure for the analysis; (2) This unit of measure is usually acceptable to managers because they understand it; (3) The method is relatively simple to use; (4) It does not require extensive computer capability or number crunching power; and (5) It provides results fairly quickly (you don't have to wait for a year-end budget report). On the other hand, there are some disadvantages.

Disadvantages of the Method

There are a few disadvantages: (1) This is a norm referenced method, with several attendant problems, (2) It relies on supervisor evaluations, which may be of doubtful validity and even more questionable reliability; (3) The value of one standard deviation improvement (40 percent of annual salary, based on other studies) is questionable, and should not be used if you have local benchmarks to compare it against; (4) The dollars calculated as benefits are not real dollars unless you do have your own validated benchmarks; (5) It may be difficult to tie the benefits to long term business results if the measures of productivity gain are taken shortly after training; and (6) The results do not answer the question "Did you train for the RIGHT skills".

Sample Problem For Compact Cost/Benefit Analysis

Suppose you trained 30 individuals on computer data processing skills. These persons do data entry and file manipulation, and are paid an average of $28,500 annually plus 25 percent fringe, or $137.19 per day. You sent them to Atlanta, Georgia, for training that was criticized as "too expensive" because the tuition was $1,600 per trainee. Moreover, the course lasted one and one half weeks (10 days), during which the trainees received full pay. Per diem in Atlanta was $65 and transportation was $250 per person. After the training you had each participant evaluated by his or her supervisor and you found that the training has increased the performance of the group an average of .48 Sd. You are convinced that 1 Sd gain in performance is equal to 40 percent of wage rates. What is the benefit of training, in dollars, to the company?

Training Cost		*Other Information*	
Tuition	_____	Number Trained (N)	_____
Travel	_____	Effect of Trng (E)	_____
Per Diem	_____	Value of Trng (V)	_____
Salary	_____	Cost of Trng (C)	_____
Total	_____		

The "Benefit of Training Formula" is: $B = N[(E \times V) - C]$. Now, substitute into the formula and turn the crank!!

Conclusion

Disadvantages notwithstanding, this method is probably worth using if you can establish your own benchmarks for the value of one standard deviation of productivity gain. The method is less complicated than many others and may provide useful justifications for the training enterprise. Now, it is your turn to try a "compact" cost/benefit analysis. Just work through the sample problem at the end of this paper. And think about how you might be able to use some of these techniques to justify your training endeavors.

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Free to Choose; Returns on Investment in Education in the Netherlands

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In The Netherlands expected (marginal) rates of return for 35 educational paths differ strongly, for both different levels and for different subjects within the same level of education. Private rates of return are somewhat larger than social rates; public sector rates are the smallest. They are low compared to other countries. However, rates based on cross section analyses should be low, if the reference interest rate is corrected for expected wage rises.

Large sums of money are spent in The Netherlands on education and training every year. The 1994 budget of the Ministry of Education and Science amounts to over NLG 33 billion (100 NLG = US $ 58). The total costs of internal and external training provided by companies in the private sector amounts to over NLG 3 billion. These large expenditures reflect the great importance that is attached to high-quality education in The Netherlands. However, these large sums give only a first approximation of the costs of education. Direct costs paid by students themselves have not yet been accounted for, nor the opportunity costs. For students themselves forgone earnings are far and away the most important costs. In the interest of simplicity many empirical studies therefore deal with those opportunity costs only. Forgone net wages are related to forgone gross wages and therefore to forgone taxes and social security contributions. As such, opportunity costs are not only an important part of individual or private costs but also of social costs of schooling. Total costs for the public sector consist not only of direct costs but also of these forgone taxes and social security contributions.

Since Becker (1964, 1975) and Mincer (1958, 1962, 1974) many papers have been devoted to measuring the costs and benefits of education especially in terms of the internal rates of return of investments in education. By definition the expected internal rate of return is the rate of discount that equates the present value of the expected investment stream to the present value of the expected (additional) benefits stream. In this paper expected rates of return for Dutch data are analyzed. The rates might be calculated for net as well as for gross or social investments and revenues: Private and (marginal) social rates of return. Under many assumptions the difference between gross and net costs and revenues might be interpreted as costs and benefits for the public sector.

The freedom of choice allows the Dutch student to choose from many educational paths, all with their own expected rates of return. In section 2 we discuss who is the central agent in the investment decision. In section 3 we discuss some major points of the Dutch educational system. The costs and revenues are discussed in section 4, calculation methods of the rates of return and the reference interest rate in 5, and the main results for The Netherlands in 6.

2 Investment in Education as Household Production

The view that investment in education increases human capital is already stated by Adam Smith (1776): "A man educated at the expense of much labor and time ... may be compared to one of those expensive machines".

The question is now: "Who is the central agent deciding to invest?" Investment in education is not

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simply investing some amount of money, nor simply teaching. Education improves human capital. The accumulation of human capital as such is the output of household production. So the student is the producer, not the school. He/she is the central agent in the processes of teaching, learning, accumulating and using of human-capital; see figure 1.

Figure 1 Learning, Teaching, Accumulation and use of Human Capital

		inputs	outputs
1	production	- manpower (teachers) - other direct costs	teaching
2	household production (learning)	- teaching - time - direct costs (e.g. books)	accumulation of human capital
3	a production	- increased human capital	increased productivity
	b household production	- increased human capital	other benefits

Teaching as such is an intermediate product only; for the student it is an input in the household production of accumulation of human capital. Finally, the accumulated capital should be used in production and/or household production to generate benefits of education. Here again the student is the central agent who decides whether his capital will be used or not.

Figure 1 gives only a raw sketch. For instance transfers and taxes are not included. Direct costs of teaching may be partially financed by students (or by their parents) in the form of tuition fees. Student allowances might partly compensate for the opportunity costs of the time invested in learning. The input of increased human capital might result in higher productivity as well as in higher satisfaction for the employee himself. Although job satisfaction is often mentioned, the Dutch data do not show any positive relation between job satisfaction and the educational level.

3 The Dutch School System and Different Educational Paths

One of the most striking features of the Dutch system is the combination of the almost complete centralization of the administration by the state along with the fact that the great majority of basic and secondary schools are private. This is due to the great school struggle between roman catholics and protestants in the nineteenth century which resulted in the right for every (e.g. religious) group to have its own schools financed by the same system as the public schools. This results in the remarkable fact that there are hardly any differences in school quality between different schools of the same type, nor between private and public schools.

The *first level*, basic school, consists of a uniform program of eight years schooling (age 4-12) of which seven compulsory (age 5-12).

The *second level* consists of another six compulsory years of schooling; four full time (age 12-15) and another two years (age 16,17) full time or part time (apprenticeship). All the secondary schools have now to teach the same 15 subjects during the first three years of compulsory education, although at different levels. These subjects are almost all non-vocational. There are four different levels (in ascending order) of four to six years of schooling before graduating:

VBO, 4 years pre-vocational (until recently junior vocational: LBO),
MAVO, 4 years junior secondary
HAVO, 5 years senior secondary
VWO, 6 years pre-university (grammar school)

Until recently, at the age of twelve years, the (parents of) school children had to choose between vocational (LBO) and non-vocational education.

Completed schooling implies in general four additional years of schooling: senior vocational (**MBO**), higher vocational (**HBO**) and university (**WO**). Standard (short) paths are the paths where the highest level is chosen that is allowed according to the secondary school exam:

VBO -> MBO, MAVO -> MBO, HAVO -> HBO, and VWO -> WO

So at first sight there are for the student, only two important decision moments in his school career. At the age of twelve years the parents decide between four different levels. This choice is strongly influenced/rationed by the results of the Dutch SAT test and the advice of the principal of the primary school. This choice does not involve any financial investments for the student. The second choice is much more important. The student chooses between the labor market and finishing a complete school career. For the student, for the parents and for the public sector this is a choice with substantial financial consequences. It is important to note that this decision is not about one additional year of schooling but of four or none additional years. Differences in total schooling years for standard paths are due to differences in secondary schooling and reflect also differences in level that cannot be chosen freely.

Free to Choose Continuous choice in the number of years can be made by the student by "choosing" to drop out at any moment. However, the consequences of dropping out (about 30%) are not analyzed here, because information about dropping out is not contained in our data sets.

In secondary education there are many (re)switching opportunities for the pupil. At the end of each school year pupils in general are allowed to choose for one level lower without losing a year even if they failed to pass. After the first year they might choose for one level higher if they have good marks. After graduating secondary school they have the right to choose for another secondary school one level higher, losing one year.

Furthermore, Dutch students have the choice of many other possibilities too. Within the system *"stacking" paths*, *long educational paths* and *roundabout paths* are allowed. Stacking means that after the student has completed a certain path he/she takes a second course. For example after MBO a HBO course or after HBO a university course, or even MBO-HBO-university is a possibility. Long paths begin with a level that is lower than necessary. For example MAVO-HAVO-HBO or HAVO-VWO-university. Both paths cost an additional year of schooling compared with the standard path. Finally, roundabout paths are paths which include an unnecessary intermediate stage. For example HAVO-VWO-HBO cost two additional years. Recent data (Commissie Leerwegen, 1995, pp.46-50) show that of a 100 HAVO-graduates only 41 choose for HBO, 26 choose MBO (roundabout path) and 16 VWO (long path); 4 choose for the dual system and 13 leave the school system. Of a 100 new HBO students only 39 are HAVO-graduates, 30 MBO (stacking path), 21 VWO (roundabout path), 4 HBO (roundabout and stacking), 1 university (roundabout and stacking) and 5 other. These data show that it is not only possible to choose a path other than the standard one, it is very frequently done. So in fact the Dutch student has many more choices than simply following or not the standard path. The Dutch government is now preparing new laws to reduce the number of students choosing such more or less inefficient paths.

Finally, it should be mentioned that graduating gives formal rights. A VWO exam for example entitles the student, among other things, to choose for a study of law at any of nine Dutch universities with a department of law or economics at any of the six universities with a department of economics. The university departments have not the right to select new students. Selection takes place at the end of the first year. Therefore the dropping out rates are high.

4 Costs and Benefits

Direct and Indirect Costs; Private and Social Costs In the cost-benefit analysis of investment in education, costs and benefits are only accounted for if they are measurable in financial terms. Furthermore, in many analyses of the private rates of return, following Mincer, only the costs of time are taken into account. This might be correct if the direct costs (books) and tuition fees are equal to additional income from part-time jobs, student allowances and grants. In our analyses of private returns the costs of time as well as the direct costs, including tuition fees, are accounted for. Total private costs are corrected for student allowances, which are substantial in the Netherlands. However, transfers from parents to children are not deducted. In this respect total investment by the student himself might be substantially lower and in fact private rates of return for the student himself might be substantially underestimated as they are calculated for student and parents together.

Marginal social costs are the costs of an additional student for the society. They are equal to the direct costs plus the opportunity costs. Under the assumptions of full employment and perfect competition the social opportunity costs of a student are equal to the gross reduction in gross earnings, it is the net forgone private earnings augmented by forgone taxes, social security contributions etc.; in short: Taxes. Marginal social cost might be divided between the private costs and the costs for the public sector. Even if all direct costs were paid by the student and his parents the costs of education for the public sector in the sense of forgone taxes would be substantial, especially in our Dutch data. So if the student decides to invest in education the public sector is investing also.

Private Benefits Financial private benefits of education are equal to the additional net income stream that is related to the increased productivity. To calculate this is a complicated matter. According to Willis (1986) there are two fundamental problems in calculating this additional income stream:

a) it is impossible to observe the life cycle earnings path of the same individual who has made alternative schooling (or post-school) investments;

b) it is impossible to observe all the variables (e.g. ability) which determine the earnings opportunities.

As the students select for themselves the most preferred alternatives from their opportunity sets, in general the additional income stream related to an additional course, school or year is lower than the difference between the realized earnings stream after the additional schooling and the income stream attributed to one level lower that is earned by students who didn't take such an additional course. Our data sets don not contain in our opinion sufficient information to solve the selection problem correctly. For reasons of simplicity we made calculations based on 100% of those differences as well as based on 60%, a rough mean outcome of many estimations. So at first sight the maximum benefits are equal to the differences between the earned income streams. If a student, however, chooses to take additional schooling just because he is not able to find a job, the income differences might be greater than 100%. So even at 100% attribution of income difference to education returns might be underestimated. In general, however, this will not be the case. An important problem of selection remains however. It is not correct to assume that students who did not choose for the additional schooling would have been able to earn the same additional income if they had. As the student is the central agent in the decision model it is, in fact, his point of view that is decisive. If he/she thinks 60% of income differences are related to additional education and 40% to own abilities than 60% is important for his/her decision to go on investing further.

Ex ante and ex post Benefits. A second problem of calculating the earning benefits attributed to schooling is that the student who decides to follow an additional course is interested in expected additional income, not in realized earnings of others in the passed 50 years. For ex post rates of return historical earning paths are important. Life time micro data are not available. Available are, in general, cross sections data, sometimes combined with panel data for a relatively short period. If cross section data are used no correction is made for expected real and nominal rises in wages in the future, nor for changes in income distribution. If wages are expected to rise in the future, either expected net earnings differences should be corrected or the reference interest rate should be adapted (see below).

Marginal Social Benefits and Public Sector Benefits Marginal social benefits of education for an additional student are not simply equal to his additional gross income. Social benefits may include social and cultural revenues of education such as democratic functioning of the society, its mutual solidarity, increasing health (see Weale, 1993) and economic benefits such as increased growth. Positive second order effects include increased marginal productivity and therefore higher wages of lower educated employees. Negative second order effects include displacement of lower educated people in times of unemployment. Furthermore, graduating might have consequences for screening which are better for the student himself than for society as a whole. Concluding, only in so far as all those effects together might result in no additional effect for total social welfare, additional gross income might be interpreted as marginal social benefit of additional education. Marginal benefit to the public sector is then equal to gross minus net earnings: Additional taxes and social security contributions.

5 Rates of Return on Investment in Education

By definition the expected internal rate of return on investment in education is the rate of discount that equates the present value of the expected investments (costs) stream to the present value of the expected (additional) benefits stream. The rates of return are calculated in this paper according to the formula:

$$\sum_{t=1}^{T} C_t/(1+\rho)^t = \sum_{t=1}^{T} R_t/(1+\rho)^t$$

where R_t is the (expected) additional benefit in year t, C_t the (expected) additional costs in year t, and ρ the (expected) rate of return.

Investment in education is profitable if the internal rate of return (ρ) is greater than the reference interest rate (r). This reference interest rate is not a nominal interest rate but a nominal interest rate corrected for expected rises in wages, and a premium for risk. According to the "golden rule" in the long-run the interest rate tends to be equal to relative rise in wage rates. For The Netherlands this happened to be true for the annual gross wage rate per hour and the interest rate on perpetual bonds over the period 1875-1980 (Odink, 1985). Shorter periods show, however, dynamic changes. For the period 1940-1975 the interest rate was substantially lower than the rise in the hourly wage rate of blue color workers in the metal industry, while since then the opposite is the case. In the case of the golden rule the reference interest rate would be equal to a risk premium only, unless a decrease of income inequality is expected. In many publications rates of return of over 10% have been found and even over 20% (e.g. Psacharopoulos, 1985). According to our view those high rates of return indicate under-schooling.

In this paper private, social and public sector rates of returns on investment in education are calculated. Differences in the calculated rates are due to differences in transfers, such as student allowances and tuition fees far below the costs, and to the tax system. In the simplistic case, without any direct costs the investments of the public sector are related to the mean tax rate while the public sector benefits are related to the marginal tax rate. If the marginal rate is higher than the mean rate, as is the case if the tax system is a progressive one, the benefit cost ratio will be in favor of the public sector relative to that of the student. So the rate of return tends to be higher for the public sector than the private return as the tax system is a progressive one. In The Netherlands taxes are highly progressive, see tables 1 and 2 where 55-60% of additional gross earnings are taxes and social security premiums.

6 Internal Returns to Investment in Education in the Netherlands

Expected rates of return are calculated for different data sets. Gross 1989-wages according to the Dutch CBS (1992) and net wages according to OSA 1990-panel data. With the Dutch CPB Micro-tax program net wages are recalculated to gross wages and vice versa. So for both data sets private as well social rates of return could be calculated.

Table 1 **Costs, Benefits and Expected Rates of Return for Higher Vocational Education in The Netherlands**

Cross Hourly Wages 1989 (CBS, 1992); HAVO/VWO -> HBO			
	social	private	public sector
	(in 1000 NLG)		
opportunity costs	121	40*	80*
total costs	179	52	127
total benefits (100%)	307	120	187
balance (60% benefits)	5	20	-14
balance (100% benefits)	128	68	60
rate of return (60%)	0.1%	1.3%	-0.5%
rate of return (100%)	2.2%	3.7%	1.6%

* corrected for transfer payments (allowances, tuition fees)
Source: Odink and Klijnstra (1994)

Dutch CBS 1989-Wages For HBO and WO Odink and Klijnstra (1994) calculated (expected) social, private and public sector rates of return. The benefits have been calculated from regression analyses by the CBS (1992) on the 1989-data set, using among other things dummies for age, gender, industry and dummies for seven different school levels, both for benefits being equal to 100% and 60% for earning differences for full timers. Table 1 and 2 show that public sector rates of return for HBO and for WO are substantially lower than private ones; social rates are in between. This is due to the relatively high student allowances and low tuition fees in 1989. Note that even for the public sector the opportunity costs (corrected for allowances and tuition fees) are substantially larger than the direct costs. Rates of return for university are substantially higher than for higher vocational (HBO). This can be partly due to the fact that the Dutch CBS grouped wages of VWO and HAVO graduates together.

Table 2 **Costs, Benefits and Expected Rates of Return for University Education in The Netherlands**

Cross Hourly Wages 1989 (CBS, 1992); HAVO/VWO -> WO			
	social	private	public sector
	(in 1000 NLG)		
opportunity costs	159	54*	105*
total costs	254	70	184
total benefits (100%)	1003	438	566
balance (60% benefits)	348	192	155
balance (100% benefits)	749	367	382
rate of return (60%)	3.4%	5.6%	2.3%
rate of return (100%)	5.7%	8.3%	4.5%

* corrected for transfer payments (allowances, tuition fees)
Source: Odink and Klijnstra (1994)

Decreasing rates of return in The Netherlands According to Groot (1992) rates of return for higher education were stable during the period 1965-1985. However, Table 2 shows that this is no longer the case. In the case of 100% benefits figures for The Netherlands are comparable over time. Private rates of return fell sharply in 1989; for university from about 12% to 8 and for higher vocational from 9% to 4%. Social rates of return for university did not change and are still about 6%, while higher vocational social returns declined from about 7% in the early seventies to 2% in 1985 (See also Koss-Fiszer (CBS),1988) and in 1989.

OSA 1990-data Net wage equations were estimated for different levels of education using OSA 1990-panel data with among others age and age-squared as continuous variables and gender and subject (technical, economical etc.) as dummies. Net wages were recalculated to gross wages. For 35 educational paths, based on 60% income differences the results are given in Table 3.

The striking results are:

Relatively low rates of return to education as compared to empirical outcomes for other countries. However, rates of return of 3% might still be considered as fair, remembering that the reference interest rate might be lower.

Astonishing differences among different paths, varying (in percentages) for private returns from -3 to +7 for males and from -4 to +8 for females and for social rates of return from
-4 to +6.

Even within the same level there are substantial differences between subjects of schools. HAVO-HBO from +2 to +8 for males, from -1 to +6 for females and from -1 to + 5 for social rates of return.

Finally, some long and stacking paths can give quit good results e.g. :
MAVO-HAVO-HBO (economic,) rates being +5, +6 and +5 and
MBO(economic)-HBO(economic) rates being +7, +6 and +5 respectively.

Finally, calculations have been made for full timers in hours and years (until age 65). Non activity has consequences both for opportunity costs and for additional incomes. If inactivity is taken into account some rates of return decrease while others increase or remain constant.

7 Discussion and Conclusions

Dutch students have great freedom in choosing their educational paths. However, continuously choosing can be realized only by dropping out. Standard routes have two moments of choice, at age 12 by their parents and later on after graduating from secondary education they can choose to go on for four additional years. Many alternative paths are allowed, but additional schooling will take in general two or more additional years of investment in education. Long, stacking and roundabout paths are allowed. Therefore a different number of years can correspond with the same final level. In this paper 35 different routes including different subjects within the same level are analyzed. In general the rates of return are lower than in most other countries now. Furthermore, they are lower than in the past. It is argued that in using cross section earnings data the reference interest rate should be very low, somewhat higher than a risk premium will be sufficient, unless income inequality is expected to diminish substantially. So in our view over-schooling is not generally the case. The 35 different paths, however, show great variation, for both different levels and for different subjects within the same level. Many routes are not profitable. We also calculated marginal social rates of return and rates of return for the public sector. The rates for the public sector are the lowest, the social rates are in between. Even if the public sector does not invest in higher education it will still invest forgone taxes and social security contributions and receive additional taxes and social security contributions, the benefits being based on the higher marginal tax rates.

Table 3 Private and Social Expected Rates of Return to Education in the Netherlands in 1990 (60% earning differences)

Path	private		social
	male	female	
lbo-mbo	3	6	4
lbo(t)-mbo(t)	2	5	3
lbo(e)-mbo(e)	3	6	5
lbo(v)-mbo(v)	4	7	4
mavo-mbo	-2	1	0
mavo-mbo(t)	-3	1	0
mavo-mbo(e)	-2	2	0
mavo-mbo(v)	-2	2	0
mavo-havo	4	7	5
havo-hbo(t)	5	3	2
havo-hbo(e)	8	6	5
havo-hbo(v)	2	-1	-1
havo-hbo(o)	3	0	0
mbo(t)-hbo(t)	6	4	3
mbo(e)-hbo(e)	7	6	5
mbo(v)-hbo(v)	3	1	1
vwo-wo	4	2	2
hbo-wo	5	5	3
mavo-havo-hbo	3	4	2
mavo-havo-hbo(t)	4	4	3
mavo-havo-hbo(e)	5	6	5
mavo-havo-hbo(v)	2	3	1
mavo-havo-hbo(o)	3	3	2
mavo-mbo-hbo(t)	3	3	
mavo-mbo-hbo(e)	3	4	
mavo-mbo-hbo(v)	2	2	
lbo(t)-mbo-hbo(t)	6	7	5
lbo(e)-mbo-hbo(e)	7	8	6
lbo(v)-mbo-lbo(v)	5	6	4
havo-mbo-hbo(t)	1	-1	-1
havo-mbo-hbo(e)	3	2	1
havo-mbo-hbo(v)	-1	-4	-4
havo-vwo-wo	5	3	3
mavo-havo-vwo-wo	4	4	
vwo-hbo-wo	4	3	3

e (economical), t (technical), o (educational), v (health)

Source: R. Kunnen and J.G. Odink (1994, p. 119)

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The Impact of Values on the Financial Analysis of HRD

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It has become fashionable today to analyze the financial costs and benefits of human resource development (HRD) programs. But before everyone embraces financial analysis as a panacea, the effects of using these tools should be examined. Like all tools, financial analysis can produce both benefits and problems. In this paper, I will discuss the benefits and problems inherent in using HRD financial analysis tools and emphasize the impact that values have on the results.

It has become fashionable today to analyze the financial costs and benefits of human resource development (HRD) programs. Phillips (1994) pointed out that few topics generate as much interest among HRD professionals as return on the investment. Not surprisingly, many recent books and articles detail HRD financial analysis models (e.g., Head, 1985; Mosier, 1990; Swanson & Gradous, 1988). Additionally, the literature contains case studies that document the use of financial analysis within functioning organizations (e.g., Jacobs, Jones, & Neil, 1992; Prifrel, 1985; Sleezer, Cipicchio, & Pitonyak,1992). The emphasis on HRD financial analysis is highlighted by Carnevale and Schulz (1990), who stated that human resource development (HRD) professionals reluctant to account for training, need to reorient their thinking to face the business realities of the 90s (p. 2).

But before everyone embraces financial analysis as a panacea, the effects of using these tools should be examined. Like all tools, financial analysis can produce both benefits and problems. In this paper, I will discuss the benefits and problems inherent in using HRD financial analysis tools. I will emphasize the impact that values have on the results. To provide a basis for this discussion, I will examine some HRD financial analysis tools, and describe how practitioners currently use them.

Financial Models for Measuring HRD Programs

Gilbert's (1978) theorems for defining, measuring, and engineering human performance are considered to be seminal in the HRD field. In describing his first theorem, Gilbert noted that "human competence is a function of worthy performance (W), which is a function of the ratio of valuable accomplishments (A) divided by costly behavior (B)" (p.18). Worthy performance, then, is that performance "in which the value of the accomplishment exceeds the cost of the behavior" (p.17).

HRD professionals have expanded on Gilbert's work and have developed mathematically-based formulas for measuring the financial aspects of their programs-to the penny. Examples of recent books on the topic include *Training Cost Analysis* (Head, 1985), *Costs, Benefits, and Productivity in Training Systems* (Kearsley, 1982), *Calculating Human Resource Costs and Benefits* (Spencer, 1986), *In Action: Measuring Return on Investment* (Phillips, 1994), and *Forecasting the Financial Benefits* (FFB)(Swanson and Gradous 1988). These books present specific formulas and forms for calculating costs, accomplishments, and worthy performance. For example, Figures 1 and 2 on the next pages show the performance value and cost forms used in the FFB Model (Swanson & Gradous). According to the FFB Model, the financial benefits of a program are determined by subtracting the costs of the program from the forecasted performance value of the program.

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The Application of Financial Analysis Models

The literature documents many applications of financial analysis models for measuring HRD efforts. Carnevale and Schulz (1990) identified how some companies such as Polaroid, Upjohn, Vulcan Materials, AT&T, Arthur Anderson, Aetna, and Chase Manhattan Bank rely on financial analysis models when making corporate training decisions. For example, Carnevale and Schulz noted that Polaroid's management has decided to undertake training only if it will affect the bottom line. Further, they evaluate training program with the same standards and units that local managers use as performance standards.

More detailed examples of HRD financial analyses are available in a recent book by Phillips (1994) which provides 18 cases. In each case, the author describes a specific situation, the tools and processes used and the outcomes that resulted. For those seeking more rigor, research studies are available that document specific processes and the results of using financial tools. For example, a research study by Jacobs, Jones, and Neil (1992) documented the financial benefits of structured on-the-job training. Sleezer, Cipicchio, and Pitonyak (1992) documented financial worth as part of a larger evaluation effort to assess the effectiveness of two HRD programs, a computer training course and a total quality flow-charting course. Swanson and Sleezer (1989) reported the process and results of calculating the financial worth of an organization development program.

An examination of these cases reveals that HRD professionals currently use financial tools for both strategic and tactical decision making. In addition, they use the tools to justify programs, direct resources, and rationalize choices.

Benefits and Problems with Using Financial Analysis Tools

Financial analysis tools offer many benefits. First, these tools help HRD practitioners to look at their programs through their customers' eyes and to ask the questions... What does this program really do for the customer? And, at what cost? The customers of HRD programs could be internal to the company or they could be external. The tools also help HRD professionals to answer these questions using a language that is important to the customer (dollars and cents).

Second, these tools guide practitioners in talking with other stakeholders about their programs. Effectively using these tools requires HRD practitioners to acquire broad-based information about their program from a performance perspective. Financial analysis, then, can serve as an impetus for communicating with customers and other stakeholders about program expectations and for gaining consensus about accomplishments and costs.

A third lure of HRD financial analysis tools is that they provide a seemingly rational way of making decisions. After all, a few numbers can be inserted in a preexisting formula, several calculations made and--voila! answers are obtained that seem hard to dispute. Because HRD financial analysis tools rely on logical and reasoned processes that fit with most organizational budgeting processes, these answers can be used within many departments or firms to justify current budget allocations or to lobby for additional resources. As Mosier (1990) pointed out, training and development is big business; therefore it should be evaluated in the same way as other large investments, in terms of costs and benefits . . . the same applications as are used to justify capital, land, or other resources can be used to justify training and development (p. 45). HRD financial analysis facilitates comparing HRD programs with other types of investments required for organizational operation and growth.

Financial analysis tools can be a powerful addition to an HRD professional's toolbag--but only if they are used appropriately and if their limitations are understood. The following paragraphs identify some of these limitations.

First, financial analysis tools are uni-dimensional. They can be compared to a grocer's produce scales. Even if calibrated accurately, a scale measures only weight. It ignores other important produce characteristics such as freshness, smell, and visual appeal. Similarly, financial analysis tools capture only those aspects of performance that can be translated into dollars and cents. They ignore characteristics that may be important to the organization's long-term success, but that cannot be translated into financial terms. Examples of these characteristics include loyalty and company image.

When HRD professionals and the corporate decision makers determine value to mean "bottom line" or economic value alone, a choice has been made to adhere to a philosophy defined by early classical economists and Marxist philosophy, where labor and only labor is seen as the true origin of every value (Janowski, 1993, p.43). "Western society is so enamored of the efficiency and productivity of its space age technology that any activity that is not efficient and productive simply does not, literally, measure up, and so is of little or no value" (Guy, 1991, p.287). What then becomes of the value cost factor to individuals, or teams or corporations? How do human values and corporate values fit in the evaluation tools of predicting and measuring high performance? If personal values that carry little direct financial value, are powerful enough to impact team values, and team values ultimately have the power to influence corporate values and visa versa, then how can it be denied that the individual value of one can cripple the overall value of the larger whole.

As Moltiere notes in *Les Precieuses Ridicules* "things are worth what you make them worth" (Rawson, 1988, p. 389). Such an idea could certainly speak to such issues as homelessness in the country or even the intrinsic beauty of a Troll doll. How can we not consider the power of these value systems? It was Karp and Abramms who stated, "in organizations, clear values drive mission statements, strategic plans, and effective, result-orientated behavior" (1992, p.38). Values are not simply attitude coats-of-armor that identify human differences; they provide a framework from which all things can be hung. When an organization is found operating in chaos, probably the value system of the organization is colliding with the values of groups and individuals who comprise the organization. Deal and Kennedy (1982) stated that "values are the bedrock of any corporate culture" (p.21). "These values constitute a philosophical position on what the organization thinks is important. In a way, the values can be considered the organizational personality, and this can set one institution apart from another" (Caffarella and O'Donnell, 1987, p. 4).

Abbarno illustrated the importance of values when considering the role of an individual and the moral character that is acted out by individuals in their life roles. He noted that "your identity as a morale character permeates your conduct and establishes expectations among members of the community" (1993, p.311). Thus it can be seen that values embrace a cost which much be analyzed when evaluating performance. "Ethical people can be brought down by serving in a bad organization, just as people with questionable ethical integrity can be uplifted, or at least held in check, by serving in a good one" (Brown, 1987, p.68).

The use of HRD financial analysis tools reflects values. As discussed above, that is a strength of the tools and also a limitation: One way of seeing things is simultaneously a way of not seeing other things. To minimize this limitation of HRD financial analysis it can be important to consider values and to ask the following questions:

1. Whose values are reflected in the analysis?
2. Are the values reflected in the analysis representative of individuals, a group, the dominant culture?
3. How do the calculations and results change if the values of other individuals or groups are used?

A second limitation of HRD financial analysis tools is that they have difficulty measuring aspects of performance where the feedback between action and effect is less immediate or direct. But this is exactly the kind of performance that organizations are increasingly relying on for competitive advantage. For example, Taylor (1994) reviewed the Collins and Porras (1994) book and stated that they examined great companies of the industrial era for lessons on the organization of the future. According to Taylor, Collins and Porras found that the first achievement of great companies is to create shared meaning. Instead of first concentrating on getting a visionary product and, then, riding the product's life cycle, these companies focus on building organization traits. Although most would agree that HRD professionals should play a key role in this task, using financial tools for measuring the effects of such efforts would be difficult at best. A study by Cox focused on measuring aspects of successful team work and found "most important of all, the teams that are truly value-added to their organizations are those committed to a set of core values that ensure quality performance" (1991, p.21). If a commitment to core values is important to performance how can it be evaluated? Who determines those core values? How can you get people to buy-in to them? And exactly how much are core values worth in financial terms? For example, Disneyland is frequently identified as a successful organization that relies on training for sharing and reinforcing its culture. The theme park's employees learn that they are on stage for a performance while at work and the importance of maintaining their persona. Because the effects of these training efforts pervade the organization, how could one use financial analysis tools to separate the economic worth of the training? Values are important but difficult to quantify. So, do we as professionals disregard data just because we have been unable to develop tools to measure or control for it?

Another limitation of HRD financial analysis is that it is only as useful as the information and values upon which it is based. The analyst's values or biases affect the analysis process and the results. For example, Gilbert (1978) stated that "great accomplishments are not worthy if the cost in human behavior is also very great. In my opinion, the Egyptian pyramids stand as silent monuments to worthless achievement, although the subculture of knowledge would have us honor them" (p.18). In making the aforementioned statement, Gilbert illustrates a decision based on his personal value system and, simultaneously, acknowledges an alternative perspective. As this example illustrates, an actual situation can elicit multiple paradigms of worthy performance, valuable accomplishments, and costly behavior. If an analyst uses a paradigm for performance that does not fit well with the actual situation, then the resulting benefits, while written in concrete terms, could function within the organization as a vehicle for misinformation. Kauffman (1980) illustrated this point with a story of a "hot shot" salesperson. The salesperson while heeding the directives of management to sell almost destroyed the company's credibility by writing more orders than manufacturing could produce and, thereby, creating a major system failure.

So, just how useful are our current paradigms for performance? Taylor (1994) pointed out that most of our ideas about work and organization that were born in the Age of the Machine do not apply today in the Age of the Network. He also pointed out that understanding the promises and challenges of work in today s economy requires radically new models and metaphors that go well beyond the stale rallying cries of teamwork or empowerment (p. 66).

Some of the new models being developed rely on systems and chaos theory and, therefore, recognize the importance of trial and error, experimentation, messiness, and conflict However, the current HRD financial analysis tools do not recognize that behaviors viewed as costly from one perspective (e.g., a short-term perspective) could be beneficial or even necessary from another perspective (e.g., a long-term perspective).

Many of the HRD financial analysis cases that have been reported in the literature rely on traditional paradigms of individual and organizational performance. For example, many of cases in the Phillips' (1994) book focus on improvements in the current situation.

Conclusion

The financial analyses that we conduct reflect our values and our understanding of essential individual and organizational performance. These tools provide many benefits. For example, HRD professionals can use these tools to make decisions, to consider their programs from their customers' perspectives, and to justify budget requests. Using the financial language of business is key for HRD professionals who want to be considered as peers in their business organizations.

There are also problems with using HRD financial analysis tools. For example, we should measure what is important in our organizations, not what is easy to measure. However, in our profession we do not yet have a clear understanding of the components of organization performance and how they interact to influence process and outcome . Senge (1990) and others have pointed out that the perception that the world is created of separate, unrelated forces is an illusion. Yet, the HRD financial analysis tools available today measure a single benefit (money) of a single force (an HRD program).

In addition to developing a better understanding of the interactions that influence worthy individual and organizational performance, we need to develop better measurement tools and to understand how our own values influence the measurement results that we obtain. Even when the financial calculations are accurate, they are limited by the scope and values of the analyst and decision makers within the organization.

The financial analysis tools of today provide us with a new view of HRD's contribution to individual and organizational performance. An analogy is the development of the astronomical tools. When Galileo first constructed the lens telescope for astronomical purposes in 1609, it was a powerful tool that revealed new views of the sky. He used the tool to discover such things as the four brightest moons of Jupiter, lunar mountains, sun spots, and the starry nature of the Milky Way. Substantial advancements in astronomical tools allowed a closer and more detailed look at Jupiter's atmosphere with the Voyager I in 1979. With this view, we obtained a better picture of reality and learned of additional satellites and moons. The financial analysis tools of today are like Galileo's telescope and, oh, what a view they provide! Imagine the future possibilities.

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The Economic Returns Of Education And Training From A Labour Market Point Of View[1]

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In labour market research, much attention has been paid to the investigation of the relationship between education and work. The main problem was to acquire knowledge about the skills and attitudes workers need to fulfill their jobs, and which, on the macro- level, constitute the demand for labour in a qualitative way. The educational system itself was not a topic for labour market researchers. The only item they articulated was the importance of adequate communication between the educational system and industry. The educational system was more or less considered as a black box, the most important of which was the input (information) and the output (adequately skilled people). By doing so, labour market researchers were not able to contribute to the discussions about the future organization of the educational system. The last three years, OSA has developed a research-line which opened up new opportunities. In fact, we have tried to combine two existing fields of research, i.e. the educational-economic research on the rate of return of investments in education and the labour market research. To make the educational system a party interested in labour market policies, OSA formulated as the main question: How can the economic returns of education be improved from a labour market point of view?

The Complex Relation Between Education, The Labour Market, And Work

The idea behind our research-line is that investments in school-based education are to be 'earned back' by the working of the people that have been educated. However the relationship between education and work is not a simple one (see figure 1). First, the two systems are not immediately related to one another, but they are linked by the labour market. On the labour market, qualitative matching problems between supply and demand usually occur. That means that the occupational or qualitative structure of the labour supply does not fit the qualitative structure of the demand side. These kinds of problems may be caused by a malfunctioning of the labour market, but also by pupils' and students' choice of courses taken.

Secondly, even if on the individual level the match between supply and demand is not perfect, a work relation may be brought about. In that case, the labour market problem is transposed to the shop floor. For a number of reasons, the workers' qualifications may not fit the qualifications required for the job even when no matching problems have emerged on the labour market. There exists a discrepancy between the worker's qualifications and the qualifications that are required to do the job adequately and to obtain maximum productivity.

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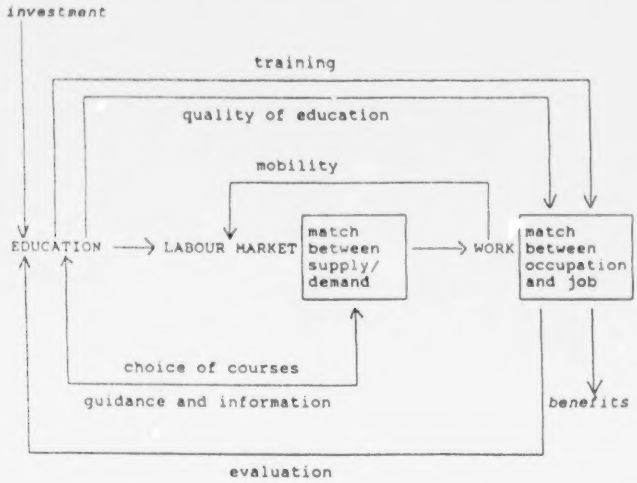
[1] The authors wish to thank Henk van Stiphout and Jean-Paul Vosse for their comment upon an earlier draft of this paper.

Figure 1 - The complex relation between education, labour market, and work



Workers may be under-utilized or over-utilized. These kind of problems on the shop floor may be caused by the quality of former vocational education. As far as school-leavers are concerned, this seems evident. Older workers may also experience matching problems in the work situation because what they did learn at school is becoming obsolete.Our assumption is that the financial and economic benefits of education are higher as the matches on the labour market and in the work situation are better. Given the level of investments, the rate of return is expected to be higher. So, the functioning of the labour market, the choice of courses taken by young people, and the quality of vocational education and training all influence the returns of education. In this paper, we concentrate on the effects of different choices of courses and of training on the returns of education.

Choice Of Courses

Broadly speaking, two developments can be observed in the labour market. The first one is the rising of the average qualitative level of the employment structure; the second is a shift of employment from manufacturing towards the service-sector of industry. These seem to be structural changes in the economies of Western European countries, and presumably, of the USA as well. In the long run, these changes will lead to a shortage of employment for the unskilled and lower skilled work force. At short notice, the labour market perspective of these people may be better because of a high rate of replacement demand, due to older workers retiring from work.

Decisions made by young people with respect to their education are not always corresponding with developments on the labour market. In the Netherlands, each year about 15% of the school-leavers entering the labour market have no diplomas or certificates at all, and 45% have not completed vocational education. Besides that, unemployment is relatively high among students from the university, especially among graduates in social and cultural sciences and arts. From a labour market point of view, these students, apparently, have made the wrong choices.

Choosing a discipline or a vocation is a far reaching process which starts in the last year of basic schooling and ends when leaving the educational system. As a result, school careers are generated. The Netherlands Economic Institute, commissioned by OSA, has computed the rate of return of a large number of school careers (educational routes) (Gelderblom e.a. 1994, Odink en Kunnen 1995). The rates of individual return turned out to vary from -4% to +8%, the rates of social return varied from -4% to +6%. Departing from the same starting point, the rates of individual and social returns of the economic/administrative routes are usually higher than those of other disciplines. This applies to all routes ending at higher vocational levels. For the route via lower and secondary vocational education, the caring discipline produces higher returns than the economic/administrative discipline, while for the route from junior general to secondary vocational education, the returns of these two disciplines are equal. The technical disciplines usually produce the second best rate of return, while the returns of the caring discipline are usually the lowest.For most disciplines, the rates of return are higher for men than for women.

With regard to the practical relevance of our research line, an important question is whether knowledge about the rates of return of educational routes should be applied in the process of choosing a discipline or an occupation. Computations of educational returns are based on historical data, while relevant information for young people who have to make their choice of courses, concerns the future labour market. A comparison of the computed rates of returns and short and medium term labour market forecasts reveals a reasonable resemblance, however.

In general, the rate of return of education is relatively low in the Netherlands, as computations by the Netherlands Economic Institute did show (OSA 1994, Gelderblom e.a. 1994a). One interpretation is that the Netherlands are investing too much money in education. However, the average Dutch level of education is not higher than in most other Western countries. Government expenditures on education are not, either, and show a tendency to decline. Another explanation may be the malfunctioning of the labour market, which might be the reason that volume signals (shortages and surplusses) do not adequately influence the choice of courses during school time.

Wim Groot and Eddie Mekkelholt of Leyden University, also by order of OSA, have analysed the choice between technical and non-technical education in four Western countries: the Netherlands, Germany, the United Kingdom and the United States (Groot and Mekkelholt 1995).
Table 1 shows the results.

Table 1 - Effects of choices of courses in 4 countries, 1992

	expected earning effect	expected rate of return
Netherlands		
lower technical	-36%	+1.2%
lower non-technical	+62%	+ .9%
higher technical	+69%	+4.9%
higher non-technical	-38%	-3.1%
Germany		
lower technical	+42%	+33%
lower non-technical	+52%	+33%
higher technical	+41%	+61%
higher non-technical	+58%	+68%
United States		
lower technical	+81%	+47%
lower non-technical	-25%	-26%
higher technical	+63%	+47%
higher non-technical	+35%	+38%
United Kingdom		
lower technical	+56%	+28%
lower non-technical	+71%	+38%
higher technical	-40%	+ 8%
higher non-technical	+53%	+11%

Method: switching regression analysis. Data: NL - OSA-labour supply panel 1985-1992; G - Sozial ökonomisch panel 1986; UK - British Household Panel Survey 1991;
USA - National Longitudinal Survey 1981.

The figures in table 1 indicate the expected differences in wages and in rates of return between the field of education chosen and the alternative field. Only two fields of education have been distinguished, namely technical and non-technical education. A positive percentage means that the expected earnings or the expected rate of return are higher for the field of education chosen than for the alternative field. A negative percentage means that the expected earnings or rate of return of the field chosen are lower than those of the alternative field.

The negative earning effect of a lower technical education in the Netherlands means that people with this kind of education would have earned more if they had been educated non-technically. The reason why they have chosen a technical education yet, may be the positive rate of return, indicating positive costs. Apparently these people receive benefits or welfare from the being enrolled in education.

The figures for the Netherlands also show the effect of the wrong choices of university students mentioned above. Working people with higher non-technical education earn less as if they had chosen for higher technical education. Also their expected rate of return is lower, which shows that lower costs do not compensate for their lower earnings. This may be caused by the relatively high unemployment rates of graduates in the social sciences and arts. Table 1 suggests a stronger allocative effect of expected earnings and rate of return on the choice of a course in Germany than in the other countries, this effect being weakest in the Netherlands.

This brings us to the process of choosing courses. What are the motives of students for choosing a particular course of study?Further research revealed that information and considerations about labour market perspectives do not play a very important role in the actual choice of a course or an occupation by young Dutch people. The intrinsic qualities of the occupation prevail. Yet, when young people are asked what they think the most important aspect of their future occupation, many of them answer that this is, besides their interest in that particular occupation, the chance of finding a job with it. This is more often the case among students who have chosen a technical training than among others. So, there seems to be a difference between preferences and actual choice of course.

One explanation for this observation might be, that the expectations young people have with respect to labour market developments are so uncertain, that in their final choice most importance is attached to the intrinsic aspects of the course and of the occupation. In other words, there may be a lack of information.The fairly weak allocative effect of earnings and rate of return may prove to be a serious problem in the near future.

Forecasts of the demand of labour in the short and medium term indicate that there may be shortages of technically educated people at the lowest as well as at the highest level, of teachers and of people who have received junior and senoir training in the caring disciplines. These forecasts are based on the expected economic development. To reinforce the Netherlands' international competitive position, the Dutch government pursues a science and technology stimulating policy. As a result, the demand for employees with higher technical education could prove to rise more sharply than is expected at this point.

Today students' choice of courses seems not to be in line with the future demand of labour, but problems can not be prevented by merely changing the choice of discipline. If more students choose a technical discipline at the lowest level this will have a negative effect on the caring discipline, where shortages are already expected to occur. Likewise, an increase in the number of technical students at the highest level could result in an increased teacher shortage.

A better solution seems to be the transfer of unskilled people to lower vocational education and apprenticeship, both in the caring and technical disciplines. Likewise, better progression routes to secondary and higher technical and vocational education are important.

Discrepancies And Training In Work

Knowledge and skills learned at school are utilized in work. Underutiliz[illegible]n and overutilization are indications for matching problems on the shop floor. In 1992 33% of the Dutch work force experienced a gap between their qualifications and the work they did. There are several kinds of discrepancies, as table 2 shows.

Table 2 - Discrepancies between education and work, 1992 (%)

- unsufficient practical experience	16%
- education for a different profession	38
- education on higher level than job	29
- education on lower level than job	11
- education is out of date	6
	100%

(Allaart e.a. 1993)

These discrepancies have a negative effect on job satisfaction as well as on earned wages (Mekkelholt e.a. 1991). So we can assume that the rate of return of education is negatively influenced by the existence of a gap between the skills of the workers and the qualifications required to do the job.

There are 3 causes for this kind of gap:

a. matching problems on the labour market have been transposed to the shop floor;
b. workers' qualifications are becoming obsolete;
c. job content has changed.

Most of the discrepancies mentioned in table 2 are probably transposed from the external or the internal labour market. Essentially for employers this is a selection problem. A solution may be found in the replacement of employees by others, but introductory courses may also be helpful.

Out-of-date education, obsolete workers' qualifications and changing job content are related phenomena. They indicate the importance of maintenance and innovation of vocational qualifications.

Especially the rapid growing technological developments of products, services and production processes have made it necessary for working people to keep their vocational qualifications at an appropriate level by means of regular extra training. In the period september 1986 - september 1988 41% of the employees in training companies had participated in one or more training courses. In the period september 1990 - september 1992 this figure was 45%. The participation rate of employees, who worked in companies that did not provide training courses for their workers and who therefore had to take courses in training institutions themselves, declined between these two periods from 33 to 26% (OSA labour supply panel). These figures underline the importance of training policy by companies for the quality of the labour force.

It is necessary from business perspective as well - in this case an increase in productivity - to provide further training to employees. Consequently, the quantity of internal and external company training courses has increased considerably between 1986 and 1990. In 1986 405,600 internal and 301,000 external training courses have been taken. In 1990 these were 728,500 internal courses (+80%) and 390,000 external courses (+30%) (CBS 1992).

The effect of company training courses on the productivity of the company seems strong. Gelderblom e.a. (1994b) used data from the OSA labour demand panel to estimate the effect of company training on productivity and wages. This database consists of more than 2,000 manufacturing, service and state organizations, questioned every two year. The researchers estimated that in 1989 and 1991 a 1% increase of the number of employees taking courses has resulted in an increase of productivity of approximately 1%. The effect of external courses was stronger than the effect of internal courses. Company training proved to be of little influence on the amount of wages the employer had to pay. The wage sum was strongly effected by the composition of the company's labour force: there is a positive relationship between the average level of education of the employees and the total wage bill.

These effects on productivity and wages may explain the increasing training efforts of companies during the last, say, ten years. The rate of return may even be higher because there are clear indications that after a period of expansion companies are going to test their training policies for efficiency and effectiveness, in the sense that they are looking for courses that are better geared to the company's requirements. As mentioned above, the number of courses taken between 1986 and 1992 increased, but the average costs per course have decreased. The number of internal courses has increased in comparison with external courses, but fifty percent of the internal courses are set up with help from outside. Trade organizations now provide a smaller part of the company training courses than in 1986 but the role of commercial, private training institutes has become more important.

Many researchers have shown that for individual workers taking company courses is very profitable. According to Mincer (1991) one company course results in a wage growth varying between 4.4 and 10.8%. For the Netherlands Groot, Hartog and Oosterbeek (1993) found a wage effect of 21.2% for every year courses were taken. Groot (1993) concludes the effect being even 32.2%. Gelderblom e.a. (1994a), using OSA la bour supply data, found an increase of the net hourly wage of 2.8% per company course taken.

Looking at these results it seems clear that taking company courses is a very profitable investment. High rates of return usually are indications for underinvestment.

There may be many reasons for underinvestment in training, one being the reluctance of workers to participate. Kunnen and De Voogd-Hamelink (1995) have tried to explain workers' participation in training by analyzing data of the OSA labour supply panel. First, data of representative samples of the Dutch labour force have been analyzed (cross-section analyses). Two kind of training courses were distinguished: company courses and other, non-company courses.

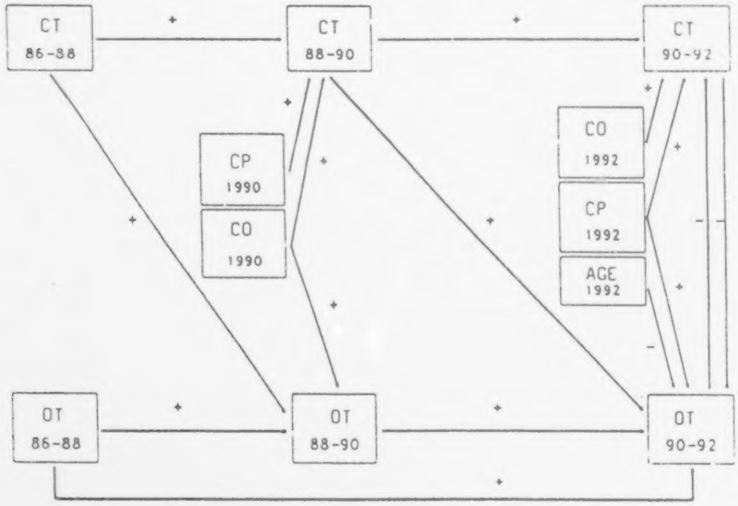
Table 3 - Logitanalysis of participation of workers in training courses (1992)

	company training	non-company training
sex=female	-0.48**	-0.01
age	-0.05**	-0.05**
education=low level	0.03	-0,19
civil status=single	0.24	0.13
occupation		
- high white collar	0.12	0.06
- low white colar=reference		
- blue collar	-0.19	-0.25
company training courses taken before	-0.23**	0.02
other training courses taken before	-0.17	0.31**
company size		
-size=1	0.52*	-0.07
-size=2 = reference		
-size=3	-0.18	0.07
-size=4	-0.16	-0.05
company finances courses	1,64**	0.18
industrial sector		
-manufacturing = reference		
-services	-0.06	0.25
-state and public administration	0.43*	0.08
appointment		
- fixed	-0.02	-0.19
- temporarily = reference		
number of work hours per week	-0,00	0.01
number of months appointed	-0,02	-0.01

** = $p<0.05$ * = $0.10<p<0.05$

Female workers have a smaller chance to take company courses than male workers. It should be noted, however, that in 1988 and 1990 this was not the case. The negative effect of age is in accordance with the human capital theory. Low educated employees do participate as much as in company training as high educated employees. In 1988 and 1992 they participated less in other courses, but this difference disappeared in 1992.The probability of taking company courses is smaller for workers who have taken courses in the previous two years. In the case of other courses the opposite is true: previous participation increases the probability of participation.

Figure 2 - Panel analysis of participation in training employees, 1986-1992



CT = employee taking company-based course(s)
OT = employee taking non-company-based course(s)
CP = company pays training courses
CO = company organizes training courses
AGE = age of employee

Analysis of data of a fixed sample of workers in several years (panel analysis) shows that people who have taken courses before will continue to do so in future (figure 2). Employees who have taken company training courses subsequently often take other vocationally oriented courses. Whether or not employees will participate in company training courses, depends, among other things, on the company's training policy. Personal characteristics seem to be less important. Wong and Siegerist (1989) showed that employees are more inclined to take company courses when they feel that by doing so they contribute to the commercial succes of the company and when the effects of their training efforts are made perceptible to them. Furthermore it is of importance that employees having taken training courses receive a part of the benefits of company training.

Companies that pursue active training policies, follow a selective employment policy. Women and poorly educated people have less chance of being employed, because the rate of return of their company training is expected to be relatively low. This may be a self fulfilling prophecy, of course. It may have as a consequence, however, that these categories do not sufficiently maintain and renew their qualifications, which means that for them the value of this capital asset will decrease. Investigations have shown that this could also involve a rise in social inequality.

In view of the foregoing, it seems important that sufficient facilities are available to maintain and renew qualifications of the work force. On the one hand, this is a task for the business community, since an adequately trained staff is indispensable for a company's development and continuity and a precondition for company-related training. On the other hand, occupation-oriented training cannot entirely be left to the companies themselves.

Discussion

In the paragraph *Choice of courses* we have concluded that the rate of return of school-based education in The Netherlands is relatively low. In the public discussion two explanations are often mentioned:

a. Overinvestment in education by the government;
b. Malfunctioning of the labour market, so that volume signals from the labour market are insufficiently guiding the choice of courses by young people.

According to our picture of the complex relationship between education, training, work and the labour market, the rate of return of education is affected by the match between workers' qualifications and the qualifications required on the shop floor. There may be a mismatch because a mismatch on the labour market has been transposed to the shop floor. Another reason may be that the workers' qualifications do no longer fit the requirements of the job, because they are not adequately maintained and renewed. So, a lack of training in working life may be a cause of low economic returns of education. If this is true, as we believe it is, there are good reasons to reconsider the relationship between school-based education and company-based training. Especially, a reallocation of investments from the former to the latter, both by the government and the individual, is worth considering.

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Developing Supervisory Expertise: The Effects of an Inductive Versus a Deductive Training Method on the Job Behaviors of Supervisors

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This study investigated the effects of an inductive versus a deductive training method on the learning outcomes and job behaviors of supervisors. The findings showed that while supervisors in the deductive group demonstrated greater ability to apply their learning, supervisors in the inductive group perceived that the quality of their training experience was better. Implications of these findings for HRD theory, research, and practice are discussed.

Job expectations for supervisors have been changing in recent years. In the past, supervisors were expected to use a directive approach to supervise their employees (Bittel, 1987). With this type of approach, supervisors directed the work of subordinates by controlling their behaviors and actions (Bienvenu, 1976). In general, this method of supervision was consistent with the goals of most organizations, which were oriented toward high production and efficiency. However, during recent years many organizations have responded to the demands of a new economy by shifting their goal orientations from production and efficiency to quality and customer responsiveness. An outcome of these shifting goal orientations has been a growing recognition that employee knowledge and skills are critical to the effectiveness of organizations (Kirkpatrick, 1993). As a result, a directive supervisory approach, which tends to control employee behavior rather than develop employee capacity, has become increasingly less effective as a means of managing work (Bramlette, 1984; Wolfe, 1983).

Presently, organizations expect supervisors to facilitate the work of their employees (Bittel, 1987). In contrast to a directive approach a facilitative supervisory approach involves fostering a work environment that values the development of job expertise, knowledge-seeking ability, and learning skills. According to Wolfe (1983) and Bramlette (1984), a prime advantage of a facilitative supervisory approach is that it fosters a work environment which better accommodates the new and dynamic nature of work and the changing nature of those who do the work.

Present supervisory job expectations have focused greater attention on how supervisors are developed, especially as the development involves formal training programs (Bittel, 1987; Gardner, 1980). Many organizations provide HRD programs for preparing supervisors. Previous research suggests that outcomes of these programs are determined by both the content of the instruction and the methods used to deliver the content (Burke & Day, 1986). The appropriateness of the training method may be especially important given that supervisory training programs are presently emphasizing more problem solving, critical thinking, and learning skills.

Traditionally, supervisory training programs have used deductive training methods. These methods are characterized by off-site training sessions in which instructor-led presentations of content are followed-up by group discussions and small-group activities (Holland, Holyoak, Nisbett, & Thagard, 1986). A review of the related literature in HRD, educational psychology, and cognitive psychology suggests that there are three primary concerns regarding the use of deductive methods for supervisory training. First, training methods which are more deductive in nature may not necessarily be aligned with actual supervisory job expectations. Although deductive methods are commonly associated with knowledge and skill acquisition and, to a somewhat lesser degree, retention and transfer, one of their limitations is that they do not necessarily require the use of, or result in the development of, higher-level cognitive skills (Newbert & Binko, 1992). This situation is concerning since present job expectations require that supervisors possess greater problem-solving, critical-thinking, and learning skills.

A second concern with the use of deductive methods for supervisory training is that the development of and ability to use complex cognitive skills may be diminished because of the location where training typically occurs (Gardner, 1987). Supervisory training which utilizes deductive methods often takes place away from the job site. As a result, trainees are removed from the influence of people and environments that provide rich opportunities for acquiring, transferring, and applying information.

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A third concern is that the use of deductive methods for supervisory training may not account for the relationship between training method and training content. Studies have found that certain training methods are more suited for particular content areas (Burke & Day, 1986; Carroll, Paine & Ivancevich, 1972). Yet, supervisory training programs seem to rely on the continual use of deductive methods without considering whether other types of training methods may be better suited for specific content areas.

In contrast to a deductive method of training, guided discovery is an inductive method that appears to be more consistent with present supervisory job expectations. Featuring a more inductive sequence of instructional events, guided discovery involves trainees in three main learning tasks: (a) gathering, organizing, and categorizing information; (b) identifying critical relationships among information and making inferences based on those relationships; and (c) testing inferences by applying them to new situations (Joyce & Weil, 1986; Newbert & Binko, 1992; Taba, 1966). Previous research has shown that inductive methods are more effective in developing higher-level cognitive skills, all the while accomplishing the same short-term training outcomes as deductive methods (Newbert & Binko, 1992; Vazquez-Abad & Winer, 1992). However, these studies have been primarily conducted in academic and laboratory settings with children and college students. Therefore, while an inductive method appears to be more aligned with present supervisory job expectations, the theoretical proposition that it effects the simultaneous development of technical knowledge and cognitive skill has not been empirically examined with adults involved in training activities.

Purpose of the Study

The purpose of this study was to determine the effects of a guided discovery versus a deductive training method on the learning outcomes and job behaviors of supervisors. As illustrated in Figure 1, it was proposed that if a training method can affect learning outcomes and job behaviors, then it is likely that trainees receiving the same training content will demonstrate different learning outcomes and job behaviors, because of the training method used to deliver the content.

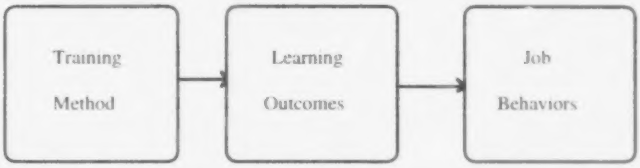

Figure 1. Theoretical Model of the Relationship Between Training Method, Learning Outcomes, and Job Behaviors

Hypotheses

This study investigated the effects of a guided discovery versus a deductive training method on supervisors' acquisition of learning, application of learning, self-reported problem-solving skill, and facilitation of subordinate problem-solving skill. Specifically, four hypotheses were tested:

Acquisition of Learning. Supervisors experiencing the guided discovery method will acquire greater mastery of the concept taught during training than those experiencing the deductive method.

Application of Learning. Supervisors experiencing the guided discovery method will demonstrate greater ability to apply the concept taught during training to a job task than those experiencing the deductive method.

Self-Reported Problem-Solving Skill. Supervisors experiencing the guided discovery method will demonstrate greater levels of problem-solving skill when handling a challenging job task than those experiencing the deductive method.

Facilitation of Subordinate Problem-Solving Skill. Subordinates of supervisors experiencing the guided discovery method will report that their supervisors expected them to demonstrate greater levels of problem-solving skill when learning the concept taught during training than will the subordinates of supervisors experiencing the deductive method.

Methods

In the following paragraphs the subjects, research design, outcome measures, rating instruments, and data analysis plan that were used in the study are discussed.

Subjects. This study was conducted during the first week of March, 1994. The experimental treatment was administered in an existing supervisory training program offered by the HRD department of a large financial services organization. This company is located in the mid-west region of the United States and is large in size, employing 15,526 people at the time of the study. Supervisors represent 5.9 percent of this company's total employee population.

Although 19 supervisors originally enrolled in the supervisory training program, 3 did not attend two mandatory training sessions and were considered drop-outs of the study. The remaining 16 supervisors served as the subjects in the study.

Of these 16 supervisors, 10 were female and 6 were male. The subjects was fairly young and well educated. The mean age was 33.5 years and 12 supervisors had attained a college degree or higher. In addition, the majority of the subjects (n = 10) were new supervisors with less than 18 months of supervisory experience. The supervisors were also fairly new to the organization with 9 subjects having less than 5 years of service with the company, 5 subjects having 5 to 15 years of service, and the remaining having more than 15 years of service. The supervisors worked in a variety of functional areas with 5 supervising a production-oriented area, 5 supervising an accounting/clerical area, 3 supervising a sales/marketing area, and 3 supervising an engineering/technical area.

Research Design. This was an experimental type of study utilizing the post-test only control group design for the main independent variable (Campbell & Stanley, 1963). Subjects were randomly assigned to either a guided discovery or a deductive group for 1 of 11 instructional units in the training program. After the training was delivered, post-test measures were taken immediately following training and three weeks after training. This design was chosen because it enabled the researcher to compare the guided discovery and the deductive method in terms of their effects on the selected dependent variables. Furthermore, randomization assured that the groups were equal on any confounding variables that might be related to the dependent variables, thus assuring that differences observed in the dependent variables could be attributed to the treatment rather than to other causes (Kerlinger, 1964).

The guided discovery and deductive versions of the instructional unit were designed by the researcher. The content of the instructional unit, the constructive feedback process, was derived from an existing instructional unit used by the participating organization. A subject matter expert in the participating organization validated the content of both versions of the unit. In addition, two instructional design experts at The Ohio State University validated the guided discovery and the deductive methods used in the different versions of the unit.

Two experienced trainers employed by the HRD staff of the participating organization delivered the training. Separate two-hour training sessions were held for each of these trainers. The training objectives, method, activities, and evaluation methods that trainers were expected to use when delivering the training were discussed during these sessions.

The trainers delivered the training during two off-site sessions, which were held seven days apart. Although the total amount of instructional time was constant for both groups (4 hours), the format of the sessions varied with the method of training. For the guided discovery group, the first session lasted one hour and included discussion of the training topic, the learning objectives, and the on-the-job training (OJT) activity. For the OJT activity, supervisors identified people in the workplace who possessed expertise in giving constructive feedback and then met with these individuals to collect information about the constructive feedback process. Trainees were asked to complete this activity before the second training session. The second training session lasted three hours during which time supervisors engaged in three inductive learning activities. First, in small groups supervisors shared and categorized information that they had collected during their OJT activity. Next, in a large group they explored relationships within and between their categories of information and used their resulting knowledge to make inferences about the critical steps in the constructive feedback process. Lastly, supervisors tested and revised their inferences by analyzing video-taped and live role-plays of constructive feedback situations.

In contrast to the guided discovery group, the first training session for the deductive group lasted three hours. During this session, the trainer presented the topic, objectives, content of training, and instructions for an OJT activity. Supervisors then practiced applying the content by critiquing video-taped and live role-plays of the constructive feedback process. At the end of this session, supervisors were assigned an OJT activity to be completed before the second training session. This activity involved practicing the constructive feedback process in a real job situation. The second training session lasted one hour and included a large group review of the constructive feedback process and a discussion of the results of the OJT activity.

Outcome Measures. Four dependent variables assessed the effects of training. Acquisition of learning was classified as a learning outcome and was measured immediately after training. Application of learning, self-reported problem-solving skill, and facilitation of subordinate problem-solving skill were classified as job behaviors and were measured three weeks after training. Each dependent variable was measured by using a rating instrument to evaluate written examples of the criterion. According to research and design experts, for example Kerlinger (1964), rating scales are an appropriate technique for quantitatively analyzing the content of written responses.

Acquisition of learning was measured by evaluating written examples of hypothetical constructive feedback scenarios generated by supervisors. These examples were evaluated in terms of the degree to which they demonstrated six key steps of the constructive feedback process.

Application of learning was measured by evaluating written responses of supervisors in which they described how they had recently used constructive feedback in a job situation. These responses were evaluated in terms of each supervisor's application of six key steps of the constructive feedback process to a job situation.

Self-reported problem-solving skill was measured by evaluating the level of problem-solving skill that was evident in written responses of supervisors in which they described their mental thoughts about how they identified and solved a problem and the physical actions that they used to handle the problem. These responses were evaluated in terms of the degree to which supervisors gathered information about a problem situation, interpreted the meaning of the information in relation to the problem situation, and applied those interpretations to the situation to test their validity and usability.

Facilitation of subordinate problem-solving skill was measured by evaluating the level of problem-solving skill that supervisors expected their subordinates to demonstrate when engaging in a challenging task. The job task that was used as a referent was learning about constructive feedback. At the end of the second training session, supervisors were instructed to pass on the meaning of constructive feedback to their subordinates using any methods that they deemed appropriate. Three weeks later, a sampling of each supervisor's subordinates reported how their supervisor had expected them to learn about constructive feedback. These responses were then evaluated in terms of the degree to which subordinates were expected to gather information about the constructive feedback process, infer from this information the key steps of the constructive feedback process, and apply those inferences to test their validity and usability.

Rating Instruments. Two rating instruments were developed by the researcher to measure the dependent variables. The Concept Learning Rating Scale (CLRS) was designed to measure acquisition and application of learning. This instrument consisted of 6 items, which represented the key steps of the constructive feedback process as identified in the instructional unit. A weight for each of the six items was established by a panel of constructive feedback experts. A 4-point scale ranging from 1 (poor) to 4 (excellent) was used to measure the quality with which a response demonstrated each of the six steps. Scores for a response were obtained by assigning a rating for each of the six items, multiplying each rating by its assigned weight, and summing the weighted scores. Total scores were reported as interval data with a range of 1 to 4.

The Problem Solving Rating Scale (PSRS) was designed to measure the two problem-solving skill variables. The instrument used a 4-point scale ranging from 0 (not evident) to 3 (much evidence) to evaluate the level of evidence that was present in a response for each of nine problem-solving activities. A total score was obtained by summing the ratings assigned to each of the nine items. Total scores were reported as interval data with a range of 0 to 27.

The validity of both instruments was established. First, a panel of subject matter, population, and research experts established the face and content validity of the instruments. Next, two field tests, comprised of supervisors who had previously taken the supervisory training program in which the study was being conducted, confirmed the face and content validity of both instruments and established their suitability for supervisors in this particular organization.

After validity was established, a pilot test was used to assess the reliability of the instruments. Supervisors attending a supervisory orientation program in February, 1994 served as the pilot group (N = 10). Participants generated two written responses for the pilot test; in the first response they described how they had recently given constructive feedback to an employee and in the second they described how they had recently handled a challenging job situation. Four trained raters then used the CLRS and the PSRS, respectively, to evaluate the responses. Test-retest reliability, interrater reliability, and an internal measure of consistency were assessed for each instrument. As shown in Table 1, reliability coefficients were very high ranging from .78 to .93.

Table 1. Reliability Coefficients for the CLRS and PSRS

	Measure of Reliability		
Instrument	Test-Retest	Interrater	Internal Consistency
CLRS	.84	.93	.83
PSRS	.83	.78	.79

Data Analysis. A three-stage plan was used to analyze the data. First, a correlational analysis was conducted to determine if any of nine attribute variables may have influenced the results of the study. An attribute variable was to be used as a covariate in an analysis of covariance if it was found to be at least moderately correlated ($r > .35$) to both the method of training and any of the dependent variables (Fraenkel & Wallen, 1990). None of the nine attribute variables met those conditions. The second stage of data analysis involved testing the four hypotheses. Since no covariates were found, t-tests were used as the statistic for these tests. The last stage of data analysis involved analyzing the attitudes of trainees toward the training experience.

Results

Ratings of responses generated by 16 supervisors and a sampling of each supervisor's subordinates provided the data for testing the hypotheses. Table 2 presents the mean scores, standard deviations, and t values for each of the four dependent variables.

A significant difference was found for one of the four hypotheses. At an alpha level of .10, no significant difference was found between the mean scores of the two instructional groups for acquisition of learning, self-reported problem-solving skill, or facilitation of subordinate problem-solving skill. However, a significant difference ($p = .027$) was found for application of learning with the deductive group demonstrating greater ability to apply the constructive feedback process than the guided discovery group.

In addition to the results for the four hypotheses, an attitude survey was used to gather information about trainees' attitudes toward the training experience. The survey consisted of two sections. The first section assessed participants' attitudes toward the clarity of the training objectives, the consistency of the training content and the objectives, the relevancy of the content to their jobs, the usefulness of the training materials, and the expected ability to use the knowledge/skill gained from the training experience in their jobs. A 5-point scale ranging from strongly disagree (1) to strongly agree (5) was used to measure these items. The second section assessed participants' attitudes toward the quality of four training activities in the training program and the overall training experience. A 5-point scale ranging from poor (1) to excellent (5) was used to measure these items.

T-tests revealed no significant differences between the attitudes of the subjects in the two groups on any of the items in the first section. However, data revealed that there were significant differences between the two groups regarding their attitudes toward the quality of the training activities and the overall training experience. As shown in Table 3, supervisors in the guided discovery group rated the quality of three of the four training activities and the overall training experience significantly higher than participants in the deductive group.

Table 2. Means, Standard Deviations, and T Values for the Instructional Groups on Selected Dependent Variables

	Guided Discovery^{a}		Deductive^{a}		
Dependent Variables	Mean	SD	Mean	SD	t
Acquisition of learning	2.71	.82	3.31	.61	1.67
Application of learning	1.82	.52	2.55	.66	2.46*
Self-reported problem-solving skill	13.60	6.14	16.60	5.76	1.01
Facilitation of subordinate problem-solving skill	2.50	3.70	1.90	2.70	-.39

$^{a}n = 8$ for each group

*$p < .10$

Table 3. Attitudes of Supervisors Toward Four Training Activities and the Overall Training Experience

	Guided Discovery^{a}		Deductive^{a}		
Training Activities	Mean	SD	Mean	SD	t
Large group discussion	3.6	.52	3.0	.76	-1.93*
Small group activity	3.6	.74	3.5	.93	-0.30
Role-play activity	3.6	.52	3.0	.76	-1.93*
On-the-job activity	3.6	.75	2.9	.84	-1.90*
Overall training experience	3.9	.64	3.1	.35	-2.90*

$^{a}n = 8$ for each group.

*$p < .10$

Discussion

Theory in educational and cognitive psychology postulates that inductive methods effect the concurrent development of technical knowledge and cognitive skill. This study investigated whether this proposition applies to adults engaged in training activities. The findings revealed that while the two methods of training did not differentially impact acquisition of learning or problem-solving behaviors, they did differentially influence trainees' ability to apply their learning and their attitudes toward the training experience.

The findings for acquisition of learning appear consistent with previous research and theory. Training experts believe that training objectives can be achieved through the use of either a deductive method of training (Goldstein & Sorcher, 1974; Kirkpatrick, 1993) or a guided discovery method of training (Newbert & Binko, 1992), if the methods are utilized and implemented appropriately. Moreover, empirical studies conducted with deductive methods (for example, see Anderson, 1971; Burnaska, 1976; Harrison, 1992) and with guided discovery (for example, see Craig, 1956; Kittle, 1957; Worthen, 1968) have confirmed that training objectives can be achieved through the use of either method.

Surprisingly, the findings did not confirm the hypotheses for supervisory problem-solving skill and facilitation of subordinate problem-solving skill. Two explanations for these findings seem most plausible. First, it is possible that trainees were not exposed to the guided discovery method for a sufficient period of time to influence their problem-solving behaviors. Joyce and Weil (1986) and Newbert and Binko (1992) suggest that while immediate improvements in problem-solving skill are not often found with the use of one particular method of instruction, the continual and repeated use of an inductive method will in all likelihood promote the development of problem-solving skill.

A second explanation for these findings is that certain organizational factors may not have supported the types of behaviors that individuals typically manifest during problem solving. One of these factors may have been the culture of the organization. Many supervisors in the study reported that a norm of this organization is that they are expected to solve problems on their own as quickly as possible. In all likelihood, this type of culture inhibits the use or development of problem-solving skill. Another organizational factor that may have influenced supervisor and subordinate problem solving was the goal orientation of the organization. Primary job challenges reported by supervisors involved managing people, projects, and tasks to meet productivity standards and/or target dates. Seemingly, this type of production goal orientation leaves little opportunity for using or facilitating problem-solving skill in the workplace. A third factor that may have influenced the problem-solving behaviors of supervisors and subordinates was the organization's incentive system. A review of the participant responses indicated that little to no incentive was provided by the organization to supervisors for developing their own problem-solving skill or facilitating its development in subordinates.

Surprisingly, while the findings showed that the two methods of training did not differentially impact acquisition of learning or problem-solving skill, they did show that supervisors in the deductive group were able to apply their learning to a greater degree than the guided discovery group. Three rationales may possibly explain these findings. First, differences in the sequence and purpose of the instructional events used in the two training methods may have influenced subjects' ability to apply their learning. In the deductive group, participants practiced the constructive feedback process in a role-play exercise and, afterward, applied the constructive feedback process to a job situation in an OJT activity. While trainees in the guided discovery group also participated in a role-play and an OJT activity, the sequence of the learning activities was reversed and the objective for both activities was concept formation rather than concept application. In contrast, guided discovery group members collected information about the constructive feedback process during the OJT activity, and then made and tested inferences about the steps in the constructive feedback process during the role-play activity. A comparison of these differences suggests that supervisors in the deductive group may have had greater opportunity to practice the constructive feedback process in its final form under conditions highly similar to actual job situations,and, as a result, were able to apply their learning to a greater degree.

A second explanation for these findings is that the amount of time allotted for the OJT activity, six working days, may have differentially impacted the two groups. Unlike the deductive group, most supervisors in the guided discovery group had to schedule a meeting with another individual to complete the OJT activity. The limited amount of time may have prevented subjects in guided discovery group from thoroughly completing the activity and, as a consequence, diminished their ability to benefit fully from subsequent training activities and apply their learning to job situations.

A third explanation for these findings is that the nature of the method used to evaluate learning may not have fully reflected all of the learning which occurred. The CLRS was used to evaluate responses in terms of their demonstration of six pre-defined constructive feedback steps. While these steps were presented to the deductive group, the nature of the guided discovery method called for that group to induce the steps through their learning activities. A review of the transcripts and materials from the training sessions found that the guided discovery group created a five-step process; they had combined the six key steps identified in the instructional unit into two steps and had added three other steps. After comparing the instructional unit's constructive feedback process and the one created by the guided discovery group, several constructive feedback experts commented that the latter process was actually more inclusive. Thus, it is possible that trainees in the guided discovery group learned a great deal, but were unable to demonstrate that learning because the assessment tool too rigidly measured learning according to a pre-defined process.

Paradoxically, while the findings showed that participants in the deductive group were able to apply their learning to a greater degree with no differences between the two groups on problem-solving skill, participants in the guided discovery group perceived that the quality of the training activities and the overall training experience was better than those in the deductive group. Different levels of trainee participation, which are inherent in the two training methods, may explain these findings. While supervisors in the deductive group passively received information during their training experience, those in the guided discovery group actively participated in most phases of their training experience. Learning outcomes that have been associated with high levels of trainee participation include greater motivation to learn, greater interest in the content of the lesson, and increased intrinsic satisfaction in learning (Newbert & Binko, 1992; Taba, 1966). Accordingly, it is possible that trainees in the guided discovery group enjoyed the high level of participation that they experienced during training and reflected this satisfaction in their attitude surveys.

In summary, it was found that while the deductive method resulted in greater application of learning, guided discovery was the training method that supervisors preferred. Furthermore, anecdotal data indicated that certain aspects of the training experience and of the organization mediated the ability of supervisors to participate in, learn from, and apply the skills acquired during training. However, several limitations of the study should be considered when generalizing its results. The sample was small in size (N = 16) and contained a fairly homogeneous group of supervisors. In addition, the treatment was embedded within a week-long supervisory training program and, although attempts were made to avoid overlap of training content, it is possible that the findings were influenced by the interaction of the treatment with the other instructional units of the training program. Accordingly, the generalizations of this study seem most appropriate for those populations which have predominantly new and inexperienced supervisors and those training programs which focus on developing basic supervisory skills. It is recognized that replications of this study with other samples and under different conditions are required to strengthen the validity of its generalizations.

Implications. Although this study did not confirm that an inductive training method effects the concurrent development of technical knowledge and cognitive skill, there are four important implications of the findings for theory, research, and practice in HRD. First, more must be known about guided discovery before it can effectively be used as a method of training. While the findings show that guided discovery was the method that trainees preferred, the evidence also shows that the deductive method enabled trainees to apply their learning to a greater degree. Perhaps further study of guided discovery with larger sample sizes and variations in some aspects of the method (for example, varying the amount of exposure to the training method and the amount of practice with the training content in its final form) would find significant differences in the development of technical knowledge and cognitive skill, all the while maintaining the high levels of trainee interest, motivation, and satisfaction that were found in this study.

Second, the findings indicate that supervisory training programs should cautiously continue to use deductive methods for training new supervisors. However, some evidence in the self-directed learning literature suggests that the desire and ability of trainees to participate in and learn from different methods of training may vary with their level of expertise (Grow, 1991; Pratt, 1988). For example, Gerald Grow (1991) in his Staged Self-Directed Learning Model matches the degree of directiveness of the trainer with the desire and ability of the trainee to be self-directing during the learning process. Correspondingly, it is plausible that more experienced supervisors may respond differently to the guided discovery method since they have greater knowledge, skills, and experience to utilize during the learning experience. Further investigation of the relationship between level of expertise and method of training is clearly warranted.

Third, the findings suggest that evaluation of training should include assessments of changes in job behaviors and job performance. Traditionally, HRD practitioners and researchers have relied on exit surveys and, to a lesser degree, measures of learning as the means for evaluating training programs (Werner, O'Leary-Kelly, Baldwin, & Wexley, 1994). The concern with these methods of evaluation is not with their usefulness but with their completeness. The findings of this study showed that the attitudes of trainees toward training and their levels of learning immediately after training were not consistent with their subsequent job behaviors. If the results of this study had been solely based on the first two measures, the study's conclusions would have been markedly different. As this situation illustrates, the usefulness of different training methods would be better understood if the impact of those methods on job behaviors and job performance was evaluated.

A fourth implication of this study is that the influence of an evaluation method on the use of divergent and innovative thinking during training should be considered when designing training programs. As reported, the constructive feedback process created by the guided discovery group was different than, and in some ways superior to, the process defined in the instructional unit. Yet, the rating scale that was used to evaluate learning was based on the defined process. If organizations truly value creativity, innovation, and inductive thinking, it appears that more flexible methods of evaluation should be selected for training activities which involve the use of and/or result in the development of these types of higher-level cognitive skills.

Future Research. Four research questions appear central to deepening present understandings about the usefulness of inductive methods for training in organizational settings. One of these questions is: How do different groups of employees with varying levels of expertise respond to inductive training methods? Since this study focused on one group of employees, new supervisors, further examination of inductive methods with other groups of employees and differing levels of job expertise would expand current knowledge regarding the usefulness of inductive methods for training purposes.

A second important research question is: What is the role of certain aspects of the inductive method in terms of achieving training outcomes? Data in this study suggest that the level of trainee participation, the degree and type of practice with the training content, the amount of exposure to the training method, and the method of evaluation may influence the attainment of training outcomes. Further study of these variables is required to clarify their role in achieving specified training outcomes.

A third research question is: What types of training outcomes can be realized by using inductive training methods? Although numerous learning theorists have proposed that inductive methods result in greater acquisition and transfer of technical and cognitive skill than deductive methods, these propositions must be empirically investigated to examine their validity for adults involved in training activities.

A last research question that emerges from this study is: How do organizational factors influence the development and use of various types of higher-level cognitive skills? While there has been a fair amount of empirical study investigating the role of organizational factors in the transfer and development of technical knowledge and skill, much less is known about how these factors influence one's ability to develop and use different types of higher-level cognitive skills in the workplace. Considering that employees increasingly require higher-level cognitive skills to do their jobs, further study of how organizational factors influence the development and use of these skills is warranted.

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Identifying Instructional Criteria in Corporate Settings

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A factor analysis study on responses from a national sample of 372 trainers who completed the Trainer Method Acceptance Scale *provided empirical evidence of six conceptually distinct factors associated with the criteria corporate trainers employ when deciding to adopt or reject a proposed new instructional method. The results of this study suggest that those charged with trainer development may increase the likelihood of training-transfer if the rationale for changing instructional behavior aligns with criteria that trainers themselves consider important in making these decisions.*

According to McCullough (1987), most corporate trainers were themselves not trained to teach other people, either in an educational environment in general or a corporate classroom in particular. Moreover, corporate trainers naturally vary in training competence regardless of their formal preparation. McCullough, reporting for the American Society of Training and Development (ASTD), found that 98% of corporate trainers have at least one college degree; however, the rapid proliferation of technologies and teaching methods available to trainers makes it imperative that they continue their professional development. Another reason for the importance of professional development is the background of most trainers. In the survey conducted by ASTD (McCollough, 1987), only 24% of the trainers who responded indicated a background in education; the rest of the respondents became trainers after being managers, technical specialists, or salespeople. Such diverse backgrounds inevitably lead to variations in important competencies such as program planning, instructional methods, delivery techniques, training evaluation, and appropriate responses to the needs of adult learners (Henschke, 1991; McLagan, 1983, 1989).

Adult educators, for example, strongly favor specific methods that are considered appropriate for use in adult learning situations. Methods that involve learner participation in the planning of educational activities, respect for learners' backgrounds and needs, transformation of instructors from "know all" experts to facilitators of learning, and the instructor's true desire to help learners identify and self-direct their learning activities are all important considerations when working with adults in learning situations (Knowles, 1980). The practical applications of the emerging literature in the field of adult education suggest there are a variety of instructional method alternatives for trainers who deliver corporate training programs. Moreover, the field of educational psychology, using social learning/self-efficacy theories, gives further insight into the motivation and decision-making process of trainers. To those charged with the responsibility of providing professional development opportunities for corporate trainers, it would be useful to be able to anticipate and respond to the criteria *trainers* use when deciding to adopt or reject a proposed instructional method. To date, the fields of adult education, educational psychology, and corporate training have not empirically identified the criteria that trainers use to make these decisions.

Given the advances in technology as well as advances in our understanding of both adult learning theory and social learning/self-efficacy theory, professional development for corporate trainers is becoming increasingly critical. Yet, despite the enormous financial and human investments made in the field of corporate training, the training profession cannot

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identify, let alone predict or use to its advantage, those criteria that trainers themselves use in selecting instructional methods. The literature that does exist relative to "training trainers" often prescribes how training *should* be conducted, as opposed to analyzing the decision-making processes that trainers *actually* use in selecting methods. This gap in knowledge needs to be addressed so that professional development for trainers can occur in a fashion that enhances the likelihood that trainers will respond favorably to the development efforts used.

Theoretical Framework

Social Learning/Self-Efficacy Theory. Bandura's social learning theory, first proposed in 1977, explains human behavior in terms of cognitive, behavioral, and environmental components. It also explains human behavior in terms of reciprocal determinism, which stipulates a "reciprocal interaction between cognitive, behavioral, and environmental determinants" (Bandura, 1977a, p. 204). Unlike previous views that considered behavior a function of the person and the environment, reciprocal determinism emphasizes the mutually reciprocal roles of behavior, the person, and the environment on subsequent behavior. People are therefore neither "victims" of the environment, nor are they totally free agents to become whatever they choose (Bandura, 1986).

Using the social learning theory model, it was theorized that corporate trainers are markedly influenced in their decision to accept or reject a proposed instructional method by 1) their conceptions and beliefs regarding the innovation, including their personal preferences toward instructional methodologies; 2) the behavior required and self-perceptions of their ability to perform the innovation successfully; and 3) the anticipated environmental outcomes of performing the innovation. Examples of environmental outcomes that would obviously influence both cognitive and behavioral activities include anticipated support (or non-support) from peers and supervisors, effective instruction and/or modeling (or lack thereof) of the proper use of a proposed method, and expected learning outcomes.

Self-efficacy theory, a subpostulate of social learning theory, is also applicable here. Within the context of Bandura's social learning theory, behavior change is hypothesized to occur through cognitive processes that are mediated by experiences of mastery stemming from successful performance. Bandura distinguishes between "efficacy expectations" and "outcome expectations" as two distinct and primary (although not exclusive) determinants of behavior (Bandura, 1977a, 1977b, 1986). An "efficacy expectation" is defined as "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977a, p. 79). An "outcome expectation" is defined as "a person's estimate that a given behavior will lead to certain outcomes" (Bandura, 1977a, p. 79).

It is Bandura's contention that levels of self-efficacy determine whether behavior change or coping strategies will be attempted or initiated, the amount of effort that will be expended, and the amount of time the effort will be sustained in the face of failures or other obstacles (Bandura, 1977b). Regarding the relevance of social learning/self-efficacy theory to educational thinking, Ashton (1985) found that a "teachers' sense of efficacy [is] a critical construct in explaining teaching motivation. It is expected to influence the teachers' choice of instructional activities, the amount of effort they expend in teaching, and the degree of persistence they maintain when confronted with difficulties" (p. 144).

Applications of self-efficacy and social learning theory are fairly new in the training profession. Consequently, only a few scientific studies have emerged that thoroughly explore the role of self-efficacy in explaining behavior change variance relative to a training program. Indeed, there is no empirical evidence that explains behavior change, from a self-efficacy perspective, in the corporate training population (Gist, 1986). However, social learning/self-efficacy theory has been successfully applied in studies identifying the criteria used in selecting instructional methods in similar populations: elementary and secondary teachers (House, 1992); adult educators (Henschke & House, 1989); and community college faculty (Lindstrom, 1990).

Research Questions and Hypothesis

This research was conducted in two stages and constituted two separate studies. In the first stage, the actual criteria corporate trainers employ in the selection of instructional methods had to be identified. Therefore, the three research questions addressed:

1. Research Question 1. What criteria do trainers apply in the selection of instructional methods?
2. Research Question 2. With what relative frequencies do trainers evaluate the criteria?
3. Research Question 3. What demographic characteristics of trainers, if any, predict method selection criteria?

Given the answers to the first three research questions, an additional sample of the corporate training population was obtained to further study instructional method adoption criteria from a social learning/self-efficacy theory perspective. The criteria were divided into two factors, Intrinsic and Extrinsic Issues. The task was to determine if the corporate trainers used in the two samples applied common intrinsic and extrinsic criteria with equal frequency, and whether or not there were conceptual differences between corporate trainers and other teaching populations regarding intrinsic and extrinsic issues.

For the second stage of the study, the following hypothesis was tested: The criteria used by corporate trainers to evaluate potential methods of instruction are attributable to two factors as follows: ***Factor 1: Intrinsic Issues*** (Qualitative Trainee Outcomes, Trainer Enthusiasm, and Trainer Self-Efficacy) and ***Factor 2: Extrinsic Issues*** (Approval, Concept Versatility, Practicality of Implementation, and Quantitative Trainee Outcomes).

Methodology

The planning for the first part of the study occurred in three stages from October 1988 through March 1989. During the first stage, the *Method Acceptance Scale for Teachers* (House, 1988), which was used to identify instructional method adoption criteria in elementary and secondary teachers, was reviewed; wording was changed to reflect the particulars of the corporate training population. Additionally, items were added after consulting experts and the literature as to possible variables specific to the corporate training population. During the second stage, the instrument was piloted to 10 experts who were asked to complete the questionnaire and offer suggestions for clarity, additions, and deletions. During the third stage, the instrument was administered to 372 trainers. These 372 trainers represented 33 companies in 30 cities in 18 states. Two hundred ninety-seven (84%) respondents were full-time trainers, whereas 57 respondents (15%) were part time. Almost half of the respondents (179: 49%) had 1-5 years experience, but the mean number of years experience for the whole sample was 7.61 years (S.D. 6.93 years). The respondents were fairly evenly divided by gender: 217 (58.3%) males and 153 (41.1%) females.

The research instrument, renamed the *Trainer Method Acceptance Scale* (House & Hickman, 1989) had two parts. In Part One, respondents were asked how frequently they consider each item as they evaluate new approaches to instruction. Response options were "Never," "Rarely," "Sometimes," and "Often." Part Two asked for biographical data and was titled "About You." Respondents indicated whether or not they currently instruct trainees, and the level of their trainees in the organization; predominant content area taught; whether they were full or part time; their age, sex, and years of experience as a trainer; number of previous training positions held; highest degree earned; whether or not they trained in-house; how they perceived their training skills; previous training as a trainer; and the amount of enjoyment they got out of training.

The data were subjected to an exploratory, principal component factor analysis followed by varimax rotation. The initial analysis included all 72 items and required that extracted factors possess eigenvalues greater than one in magnitude. Thirty-six principal components met this criteria. A scree plot indicated, however, that between six and eight factors probably could be clearly differentiated. Rotated factor loadings revealed some ambiguity both for item factor assignments and latent trait meanings. Items were gradually eliminated to improve the clarity of item assignments and latent traits. The final factor solution included 42 of the original 72 items (58.3%) and identified six distinct factors (see Table 1).

In the second phase of the research, these six factors were analyzed with an additional sample of corporate trainers during the fall of 1992 (n=228). This time, the six distinct constructs (factors) identified in the original research were grouped into two factors, labelled Intrinsic and Extrinsic Issues in accordance with Bandura's (1986) social learning/self-efficacy theory. Moreover, the *TMAS* instrument was amended to incorporate specific measures of self-efficacy, and a seventh construct (named Trainer Self-Efficacy) was hypothesized to be an Intrinsic Issue. These data were analyzed by maximum likelihood confirmatory factor analysis, using the LISREL VI program.

The statistical analysis consisted of a goodness-of-fit comparison between a hypothetical model and a null model. To reject the null counterpart of the research hypothesis, two sets of standards were applied. The first set of standards was statistical. Significant (*alpha* = .05) positive *lambda* loadings were required and a significant incremental *Chi*-square value was required between the full and null model. The second set of standards was practical. The single practical index was a *delta* coefficient of greater than or equal to .90. This value would indicate that 90% of the total item variance was accounted for by the full model.

Results

During the first stage of the research, six conceptually distinct factors that corporate trainers use when deciding to select an instruction method were identified. Table 1 identifies these factors, their respective eigenvalues, and percents of variance.

Table 1

Factor Analysis of *Training Method Acceptance Scale*: Identified Factors with Eigenvalues >1

Factor	Eigenvalue	Percent Variance
Qualitative Trainee Outcomes (Will it increase trainee learning?)	8.18	18.6

Table 1 Continued

Factor	Eigenvalue	Percent Variance
Trainer Enthusiasm (Trainer motivation and willingness to try method)	4.14	9.4
Approval (Administration and/or peer sanction)	2.57	5.8
Concept Versatility (Can I use the method with many different curricular areas?)	1.87	4.2
Practicality of Implementation (Do I have necessary materials and guidance to try this new method?)	1.73	3.9
Quantitative Trainee Outcomes (Will there be measurable results in terms of trainee learning?)	1.52	3.4

On a scale of 1-4 (1=Never; 2=Rarely, 3=Sometimes, 4=Often), raw score means were calculated by factor and are identified in Table 2:

Table 2

Raw Score Means by Factor

Factor	Mean
Qualitative Trainee Outcomes	3.7
Practicality of Implementation	3.3
Trainer Enthusiasm	3.0
Concept Versatility	3.0
Quantitative Trainee Outcomes	2.8
Approval	2.7

No statistical tests are reported because the large sample size virtually ensures that each successive mean difference is significant. Although the sampling process for this research does not support firm generalizations, it is reasonable to hypothesize that, for many trainers, methods of instruction are most often selected because of trainer predictions of the effects these methods will have upon trainee affect and cognition. The second most frequent reason for selection is how practical the new method is perceived by the trainer to be, and the third most frequent reason for selection is a trainer's prediction of his or her own affective response in using the method.

In response to the third research question ("What demographic characteristics of trainers, if any, predict method selection criteria?"), stepwise multiple regressions of the six factors were performed on the 20 variables constituting trainer demographics. Table 3 reports those variables that were statistically related to the factors. While there appear to be a few *statistically* significant variables per factor, the *practical* significance is dubious in light of the low R-squares and correspondingly low percentage of variance explained.

Table 3

Multiple Regressions of Factors on Demographic Variables (only significant variable[s] cited)

FACTOR	VARIABLE(S)	B	β	t	p	Adj. R^2
Qualitative Trainee Outcomes	Educ. Level	.062	.234	4.2	<.000	.05
Trainer Enthusiasm	Gender	-.201	-.208	-3.7	<.000	
	Instruct trainees?	.290	.161	2.9	<.000	.06
Approval	Years Experience	-.014	-.167	-3.02	<.005	
	Employed by Same Co. as Trainees	.327	.156	2.8	<.05	
	Inst. 1st Level Sup.	-.185	-.141	-2.6	<.05	.07
Concept Versatility	Gender	-.150	-.149	-2.7	<.05	.04
Practicality of Implementation	# Previous Positions	.039	.128	2.26	<.05	.01
Quantitative Trainee Outcomes	Content Area	-.077	-.198	-3.56	<.000	
	Trainees are Members of Other Company	.310	.151	2.695	<.05	
	Full Time vs. Part Time	.264	.133	2.392	<.05	.06

Consequently, the multiple regressions suggest that the demographics tested are not important predictors; i.e., the population is homogeneous relative to the six factors. Since it would be unreasonable to assume that 372 trainers from 33 companies in 30 cities among 18 states all had similar education, background, and philosophies, these data suggest that trainers adopt similar criteria for adopting training methods *after* entering the profession.

The third research question pertained to the extent to which the factors could be reliably measured. Reliabilities (internal consistencies) for the six TMAS factors were estimated through Cronbach's alpha coefficients. Respectively, the values are: Qualitative Trainee Outcomes = .84; Trainer Enthusiasm = .80; Approval = .81; Concept Versatility = .69; Practicality of Implementation = .73; and Quantitative Trainee Outcomes = .64. Consistent with statistical expectations, there are direct relationships between the order in which factors were extracted, numbers of items constituting each factor, and the magnitudes of corresponding coefficients.

Coefficient magnitudes generally indicate, however, moderate to strong relationships between item and raw scores.

The second part of the study is generally considered to be more academic, than practical in nature. Hence, only the salient features will be discussed.

In accordance with Bandura's social learning/self-efficacy theory, it was hypothesized that the original six factors (plus one called Trainer Self-Efficacy) were actually constructs that constituted *two* factors--Intrinsic and Extrinsic Issues. This model was tested with a sample of 228 trainers representing 107 companies in 81 cities in 35 continental U.S. states. The response to variable ratio was 32.57:1, well above the 30:1 minimum desired (Hair, Anderson, & Tatham, 1987).

The TMAS instrument was also revised to delete unreliable items and incoherent factors. The final TMAS instrument consists of 44 items designed to assess the seven constructs. The items assessing each construct are arranged randomly throughout the TMAS instrument.

Construct Means, Standard Deviations, and Reliabilities. Construct scores for each subject were computed as the sums of corresponding item scores divided by the respective number of items. Therefore, the construct scores were expressed in the same units as item scores, i.e., using a scale of Never=1, Rarely=2, Sometimes=3, and Often=4. Table 4 outlines the construct means, standard deviations, and *alpha* reliabilities for the seven constructs identified in the TMAS.

Table 4

Construct Means, Standard Deviations, and Reliabilities

Construct	Factor	Mean	Standard Deviation	*Alpha* (Reliability)
Qualitative Trainee Outcomes	Intrinsic	3.8	0.30	.8328
Trainer Enthusiasm	Intrinsic	3.0	0.56	.8525
Trainer Self-Efficacy	Intrinsic	3.5	0.57	.7656
Approval	Extrinsic	2.8	0.58	.7838
Concept Versatility	Extrinsic	3.0	0.47	.6708
Practicality of Implementation	Extrinsic	3.4	0.43	.6249
Quantitative Trainee Outcomes	Extrinsic	2.8	0.72	.5903

The rather academic exercise of simplifying the model to two distinct factors (Intrinsic and Extrinsic Issues) comprised of the seven constructs listed above was not empirically confirmed using LISREL. This hypothetical model was tested against a null model with all *lambda* parameters set at zero. Two conditions needed to be met to confirm the hypothetical model. First, positive *lambda t*-values were required to be *statistically* significant at *alpha*=.05. Second, to achieve *practical* significance, the hypothetical model needed to achieve a goodness-of-fit *delta* value of $\geq$ .90 in comparison to the null model.

All *t*-values were positive, indicating positive *lambda* values, and exceeded the .05 statistical criterion. The incremental *chi*-square values exceeded the .05 statistical criterion. However, the goodness-of-fit *delta* value failed to achieve the *a priori* practical assessment criterion of $\geq$.90; therefore the hypothesized model was not confirmed.

Discussion

This study proposed to identify the constructs that corporate trainers consider important when deciding whether or not to actually try a new instructional method in their classrooms. Seven constructs have been found to be statistically significant to trainers when making methodological decisions. These results can have profound implications for those who are charged with the professional development of trainers. By suggesting instructional changes on the basis of a congruence between the beneficial aspects of the method with the trainer's own value system, chances of successful implementation increase.

In descending order of construct mean magnitude, the following constructs appear to have influence over trainers in their decision to adopt or reject an instructional innovation:

1.) *Qualitative Trainee Outcomes.* Questions almost always (Mean = 3.8) asked by trainers: Will the trainees enjoy it? Will it improve my trainees' productivity? Will it enhance transfer back to the job? Will it increase trainee interest in the topic? Will it improve their enthusiasm? Will it aid in trainee comprehension? Will it actively involve the trainees? Will it challenge them?

2.) *Trainer Self-Efficacy.* Questions that are "sometimes" to "almost always" (Mean=3.5) asked by trainers: Can I use the method skillfully? Can I use the method competently? Can I perform the technique?

3.) *Practicality of Implementation.* Questions that are "sometimes" to "almost always" (Mean=3.4) asked by trainers: Has it been successfully implemented elsewhere? Is competent help available if I need it? Do I have, or can I obtain, the necessary materials? Was it presented to me skillfully? Do I have sufficient information to try it?

4.) *Concept Versatility.* Questions "sometimes" (Mean=3.0) asked by trainers: Will it increase my opportunity to work with other trainers? Is it appropriate, or can I adapt it, to the learning styles of my trainees? Is one of my colleagues familiar with it also? Can it be used with various levels of personnel within the organization? Is it compatible with other training methods used? Can I use it in different content areas?

5.) *Trainer Enthusiasm.* Questions "sometimes" (Mean=3.0) asked by trainers: Will I enjoy using it? Will it renew, maintain, or increase my interest in instructing? Will I find trying it pleasant? Is it compatible with my teaching style? Will it satisfy my curiosity? Will it enhance my motivation to train? Can I learn the method easily? Will trying it invigorate me?

6.) *Approval.* Questions "sometimes" (Mean=2.8) asked by trainers: Will my colleagues become interested in it? Will my supervisor approve? Will it benefit my career? Will my peers approve? Will senior management approve? Will it positively affect my performance evaluation?

7.) *Quantitative Trainee Outcomes.* Questions "sometimes" (Mean=2.8) asked by trainers: Will it improve employees' performance appraisal ratings? Will it improve trainee competence on corporate promotion-related criteria? Will it enhance trainee corporate citizenship?

Moreover, it is discovered that demographic variables of trainers, such as age, content area taught, number of years as a trainer, education level, full-time vs. part-time, nor number of professional career-moves made, were not significant predictors of criteria used to try new instructional methods. This is consistent with the literature which suggests that professionals tend to adopt group-like viewpoints, philosophies, and identification fairly quickly into the job and the demographic variables listed are rarely statistically or practically significant in predicting professional attitudes.

Future research needs to further explore the role of a trainer's level of self-efficacy. Specially, we need to determine precisely how important, if at all, the construct of self-efficacy is in methodological decisions. We need to determine the extent to which trainers consciously assess their level of self-efficacy regarding an instructional innovation. Do trainers readily dismiss suggestions and training regarding new methods if they suspect they cannot perform the method--and do they cognitively attribute their dismissal to their inability to perform it? Or, do trainers consciously assess their skill-level and remain open to self-efficacy building activities for methods that may otherwise have merit?

Another important area of research would be to determine similarities and differences between the criteria identified by American trainers and by trainers in other countries and cultures. This type of knowledge would be important when training trainers in other cultures, which is increasingly the case as Americans exchange technical information with Japanese, Russian, and Middle Eastern trainers.

Although this study failed to validate an ultimately-hypothesized two-factor structure, seven cognitive constructs were found to have statistical significance. Also, for the first time, self-efficacy was found to be an important construct with statistical significance, using items that had face validity. These seven constructs can serve as a basis for further research to refine our knowledge of the cognitive antecedents of trainers' methodological decisions. These avenues of research promise to increase our understanding of trainers and the criteria they employ when making methodological decisions.

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Exploring The Use Of Training Games

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This investigation explored differences in the use of games by trainers in 82 companies. The results indicate that games are used for a variety of training and group process purposes. Trainers who spent a larger percentage of their training time on gaming activities tended to use games more often "to generate ideas/solutions" and trainers who learned to facilitate games solely through experience tended to use games more often to "introduce new concepts."

Many educators and trainers consider games an effective instructional strategy. By "games" trainers are typically referring to activities requiring participants to perform tasks, play assigned roles, follow ground rules, and/or strive to reach a designated goal. Learners frequently find games a desirable departure from traditional training lectures. The challenge games present often gets the heart racing, blood rushing, and adrenaline flowing. The result is a "natural high." Since the outcomes of games are usually in doubt, they have a tendency to captivate trainees' attention. A psychological need for closure makes people want to know how things are going to turn out (i.e., who will become the winners). Furthermore, because most games are played in the company of other individuals they also help satisfy the human need for social interaction.

To adequately prepare students for HRD practice it is important for professors to provide them an understanding of how training games are currently being used in the workplace. Therefore, the aim of this study sought answers to the following research questions: (1)Is there a significant difference in the instructional purposes for which training games are used by trainers? (2)Is there a significant difference in the group process purposes for which training games are used by trainers? (3)Is there a significant difference in the instructional purposes for which training games are used by trainers with respect to a trainer's age, gender, years of training experience, training specialty, source of training games, supervisor's views on the effectiveness of games, the percentage of training time a trainer spends on gaming activities, and how a trainer learned to facilitate games? and (4)Is there a significant difference in the group process purposes for which training games are used by trainers with respect to a trainer's age, gender, years of training experience, training specialty, source of training games, supervisor's views on the effectiveness of games, the percentage of training time a trainer spends on gaming activities, and how a trainer learned to facilitate games?

Related Literature

An early use of training games was to train military personnel (Tansey & Unwin, 1969). Chess was among the first games used for this purpose and led to other tactical games involving map maneuvers (Thomas, 1957). Near the end of the nineteenth century some military training games involved an elaborate set of rules and used charts to depict every conceivable roll of the dice. Other games involved more real-life situations using military personnel to play out various scenarios. The use of such gaming simulations grew to be a standard part of military training throughout the world (Tansey & Unwin, 1969).

During the early part of the 20th century, the growth of industry created a need for more training. Training typically came in two forms--on-the-job training and classroom instruction. Over time on-the-job training proved to be slow in delivery and restrictive in content. It was often difficult for workers to transfer back to the job site information presented in classroom lectures. Taking their cues from military trainers, trainers in business and industry began to see games as a means of dealing with the limitations of both on-the-job training and classroom instruction. In 1956 the American Management Association developed the "Top Management Decision Simulation" which became the first widely used business game in the United States (Tansey & Unwin, 1969).

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According to Thatcher (1990) organizations currently use games for a variety of training purposes (e.g., to teach envisioning, negotiations, and decision-making skills). Games are also used to develop entrepreneurial expertise (Prohask & Frank, 1990) and to help participants gain a sense of camaraderie (Gamson, 1994). Trainers have found that games can be an exciting and informative activity leading to both high cognitive and high emotional involvement in the subject matter at hand (Thatcher, 1990; MacCrimmon & Wehrung, 1984). Participants actually begin to act and feel like characters in a real life situation (Thatcher, 1990). They subsequently begin to make decisions very similarly to decisions they might actually make in real life (Prohaska & Frank, 1990).

While there is little doubt that games have gained acceptance as a viable training tool, their effectiveness as an instructional strategy appears less certain. Some researchers hold that games are neither more or less effective than other training methods (Boocock, 1994; Cherryholmes, 1966; Dukes, 1994; Pierfy, 1977). However, there is some evidence that games heighten participants' interest more than traditional instructional methods (Cherryholmes, 1966; & Pierfy, 1977). This heightened interest is sometimes attributed to the more active involvement of learners while participating in gaming activities (Petranek, Corey, & Black, 1992; & Coleman, 1980). Other research has found that games contribute to higher affective and behavioral learning compared to traditional instructional modes (Bredemeier & Greenblat, 1981) and better enable participants to fit information into a real life context (Coleman, 1980). The studies of Petranek, Corey, & Black (1992) and Foster, Lachman, & Mason (1988) have found games to be a more effective teaching tool in the understanding of human behavior.

Method

Two hundred fifty questionnaires along with cover letters were mailed to randomly selected trainers listed in ASTD's *Whose Who In Training & Development*. Eight-two usable surveys were returned giving the study a return rate of 33%. The questionnaire contained 23 questions (i.e., 13 multiple-choice, 4 rank-ordering, and 6 fill-in-the-blank type items). Questions inquired into trainers' ages, gender, training experience, training specialty, use of training games, and immediate supervisor's views on the effectiveness of games as a training strategy.

Prior to testing for statistical significance, descriptive statistics were generated for the variables investigated. Interval data such as age, years of training experience, and percentage of training time spent on gaming activities were converted to categorical data. A series of multiple group *Chi-Square* tests were subsequently performed to test for significant differences between expected and observed frequencies. $P \leq .05$ was used as the level for determining statistical significance.

Results

An examination of the descriptive statistics revealed that respondents were primarily female (68%) with a mean age of 38 years. On average they had spent 9 years in the training field. Twenty-eight percent reported a training specialization in management/supervisory training, 15% in technical training, 15% in human relations training, and 6% in career development. Seventy-six percent of the trainers claimed their immediate supervisors considered training games just as effective or more effective than other instructional/group process strategies.

Fifty-four percent of the respondents said that they learned to facilitate games solely through experience (i.e., without any coaching on the part of colleagues or the benefit of any classroom instruction). They reported spending 18% of their training time facilitating gaming activities. Fifty-eight percent of the games they used on a regular basis were created by the trainers themselves. Forty-two percent of the trainers said that they spend at least 15 minutes debriefing players at the end of each game.

The *Chi-Square* test employed to answer question one (i.e., Is there a significant difference in the instructional purposes for which training games are used by trainers?) revealed no significant differences in the ranking of five instructional purposes (reinforce previously covered information, teach new concepts, introduce new ideas, measure what participants have learned during training, and assess what trainees already know about a subject prior to training). Mean rankings for the five instructional purposes appear in Table One.

Table One: Mean Rankings For Instructional Purposes
N=82

Mean Ranking	Purpose
2.354	Reinforce previously covered information.
2.378	Teach new concepts.
2.415	Introduce new ideas.
3.622	Measure what participants have learned during training.
3.804	Assess what trainees already know about a subject prior to training.

*Items ranked 1-5 with 1 = "your most frequent instructional purpose for using a game and 5 = "your least frequent instructional purpose for using a game."

The *Chi-Square* test employed to answer question two (i.e., Is there a significant difference in the group process purposes for which training games are used by trainers?) revealed no significant differences in the ranking of five group process purposes (generate ideas, break the ice, motivate participants, build rapport among group members, build group cohesion). Mean rankings for the five group process purposes are presented in Table Two.

Table Two: Mean Rankings For Group Process Purposes
N=82

Mean Ranking	Purpose
2.39	Generate ideas.
2.866	Break the ice.
2.89	Motivate participants.
3.024	Build rapport among group members.
3.451	Build group cohesion.

*Items ranked 1-5 with 1 = "your most frequent group process purpose for using a game" and 5 = "your least frequent group process purpose for using a game."

The *Chi-Square* test conducted to answer question three (i.e., Is there a significant difference in the instructional purposes for which training games are used by trainers with respect to age, gender, years of training experience, a trainer's specialty, a trainer's source of training games, the percent of training time a trainer spends on gaming activities, how a trainer learned to facilitate games, and a trainer's supervisor's views on the effectiveness of games?) revealed one significant difference. Trainers who learned to facilitate games solely through experience used games to introduce new concepts significantly more often than did trainers who learned to facilitate games through some on-the-job coaching or by attending classes. See Table Three below for ranking frequencies for using games to introduce new concepts (*Chi Square* =10.478; P = .0331)

Table Three: Ranking Frequencies For Using Games
To Introduce New Concepts

Ranking	Learned To Facilitate Games Solely Though Experience	Learned To Facilitate Games Via On-The-Job Coaching & Attending Classes
Ranked #1	18	7
Ranked #2	8	13
Ranked #3	10	9
Ranked #4	2	7
Ranked #5	6	2

The *Chi-Square* test employed to answer question four (i.e., Is there a significant difference in the group process purposes for which training games are used by trainers with respect to age, gender, years of training experience, a trainer's specialty, a trainer's source of training games, the percent of training time a trainer spends on gaming activities, how a trainer learned to facilitate games, and a trainer's supervisor's views on the effectiveness of games?) also revealed one significant difference. Trainers who spent 25% or more of their training time facilitating gaming activities used games to generate idea/solutions significantly more often than trainers who spent 12% or less of their training time facilitating gaming activities. See

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Table Four below for ranking frequencies for using games to generate ideas/solutions (*Chi Square* = 12.526; P = .014).

Table Four: Ranking Frequencies For Using Games
To Generate Ideas/Solutions
N=82

Ranking	Trainers Spending 1-12% of Time	Trainers Spending 25% or More of Time
Ranked #1	8	14
Ranked #2	6	5
Ranked #3	9	3
Ranked #4	6	2
Ranked #5	8	0

Conclusions:

The major significance of the study is that it supports the notion that training games have become a very important part of training. Respondents reported that on average they spend 18% of their training time facilitating gaming activities. A second significance of the study is that it highlights the variety of purposes for which trainers currently use games. The lack of any significant differences found among the five instructional purposes for which training games were used suggests that the use of games may have expanded beyond some of the traditional uses such as to "teach new concepts" and to "reinforce previously covered material." Today trainers are just as likely to use a game to "pre- and post-test a learner's knowledge of subject matter content." The use of games for group process purposes also appears to have gone beyond such traditional uses as "breaking the ice" and "motivating trainees." Games are equally likely to be used for "generating ideas" and "building rapport among group members."

Two conclusions can be drawn from the statistical differences found in the study. First, the finding that trainers who spend a larger percentage of time on gaming activities tend to use games more often "to generate ideas/solutions" probably has something to do with the nature of the games they are facilitating. Games that are used in problem-posing and problem-solving may simply last longer than games used to break the ice or to motivate participants. A more frequent use of such time consuming games may drive up the overall amount of training time a trainer spends on gaming activities. The finding that trainers who learned to facilitate games solely through experience tend to use games significantly more often to "introduce new concepts" suggests that trainers who learned to facilitate games through less traditional means may be more apt to use games for less traditional purposes. It has been more customary for games to be used to "teach" or "reinforce" new concepts as opposed to "introducing" new concepts (Thatcher, 1990).

Implications:

The findings of the research have implications for HRD academes and trainers, as well as the creators of training games. The large portion of training time being taken up by gaming activities (approximately 18%) and the large percentage of trainers receiving no structured training of any kind on game facilitation (80%) suggests that there may be a need to offer more college courses on the theory and use of instructional games. In addition, the large amounts of time being spent on training games to achieve a wide range of purposes strongly suggest a need to more thoroughly research their effectiveness in achieving such purposes. As for trainers themselves, if they wish to use games for group problem solving (e.g., games intended to generate ideas and/or solutions) they may need to be prepared to devote a larger percentage of their overall training time for gaming activities. These types of games may require more time to facilitate. Finally, the current acceptance and use of games as a viable training tool is likely to afford creative writing opportunities for academes in a variety of disciplines. In addition to the games themselves, professors and trainers are likely to be in need of books that discuss both the theory and use of games. To date, this instructional strategy has received little attention by human resource developers.

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Structured On-the-Job Training: Domain and Factors

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In order to identify on-the-job training, this paper critiques previous definitions of structured on-the-job training (SOJT) and defines it based on the critiques. After discussing target clients of on-the-job training (OJT) and the realtionship between OJT and other training methods, a SOJT process model is provided. Fianlly, factors which should be considered before desinging a SOJT program are discussed.

There is an ancient proverb: Knowledge is a treasure but practice is the key to it. This emphasizes the importance of transferring knowledge into use. OJT has been recognized for its potential for high transferability compared with other training methods because of an identical or similar setting between work and training. Malcolm (1992), stating the results of a Honeywell study, found that "About 80 percent of all critical job skills [of managers] are acquired...on the job" (p. 58). OJT has been recognized as the most common form of training in businesses and industries (Lewick-Wallace & Jack, 1988). Carnevale and Gainer (1989) viewed on-the-job training as "the principal means by which technical, economic, strategic, and regulatory changes are gradually integrated into the workplace" (p. 15).

In spite of its pervasive use and criticality, there are serious concerns about OJT. Learning by doing is hit-or-miss training with no guarantee of what tasks a worker will learn (Connor, 1983). OJT has been regarded as cheap and easy training to implement without any planning (Goldstein, 1993). This kind of training may waste work resources. DeJong (1994), Jacobs (1992), and Rothwell (1990a & 1990b) emphasized the importance of structuring OJT, thus, differentiating it from unstructured OJT which is "haphazard, incomplete, and too disruptive in the workplace..." (Jacobs, 1992, p. 500).

Because of these problems, it is necessary to identify the domain of OJT before trying to structure it. The domain or the subject area of OJT can be identified through defining it, finding what steps it comprises, and specifying the relationship with off-job-training (OFFJT).

Definitions of SOJT

The importance of structuring or organizing OJT has been emphasized from several decades ago (Engel, 1958; Goldstein, 1993; Nadler, 1979). Engel (1958), cited by Kruger (1985, p. 11), defined OJT as "systematic learning through the actual performance of an occupation in the environment in which the job will be performed....a process of accomplishing the steps in the written training program, over a period of time, together with an evaluation of accomplishments and progress at noted intervals."

Jacobs has made an effort to identify SOJT's boundary. His definitions of SOJT changed several times during the last few years:

> "the one-to-one process of providing the knowledge and skills to perform a specific task within a job" (1992, p. 500);
>
> "the planned process of transferring expertise from experts to novices in the work setting" (1992, p. 2);
>
> "the planned process of developing task-level expertise by having an experienced employee train a novice employee at or near the actual work setting" (Jacobs & Jones, 1995).

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'One-to-one process' in the first definition implies that the trainee numbers should be limited to less four in most cases (Jacobs, 1992) because OJT includes close observation and guided practice. But Mikes & Sullivan's (1985) successful case study showed that the interaction among trainees and other staff's involvement in the communication channel with trainees is needed in an OJT program, depending on the task types and duration of the training. As Rothwell (1991) and Senge (1990) pointed to the importance of team learning, a whole work-unit may have to take an OJT program, especially when the tasks need interaction among the unit members.

In the second definition, the notion that expertise on a task is transferred from experts to novice is not appropriate considering adult learning theories. Often expertise in adult learning is self-generated by learners themselves with facilitation from their instructor. Trainees are not necessarily novices, especially when the training is designed to obtain context knowledge rather than to obtain subject matter expertise, for example, a newly hired school bus driver who might have been a commercial bus driver. What he or she needs is to become familiar with geographical features on the bus route and the characteristics of his or her passengers, students. Adult learners should be analyzed to determine their expertise obtained through previous experiences before attempts are made to train them.

SOJT does not have to be restricted task-level expertise which stated in the third definition. In Mikes and Sullivan's (1985) study, the OJT content was the bank assistant-manager's job intertwined with many individual tasks. Except for simple and repeated tasks, it is more important to understand how to relate individual tasks to each other in a project or job than to develop individual task expertise. Jacobs (1992) himself recognized that "some observers view the 'project' as the most appropriate unit of work analysis, as opposed to the task, which they believe does not represent the expectations of today's work-place" (p. 511).

Considering the above concerns, the present author defines SOJT as:

> Planned training to develop workers' level of procedural knowledge required in performing specific tasks/projects primarily through observation and practice on or near the job site guided by a expeienced line workers who has instructional competencies.

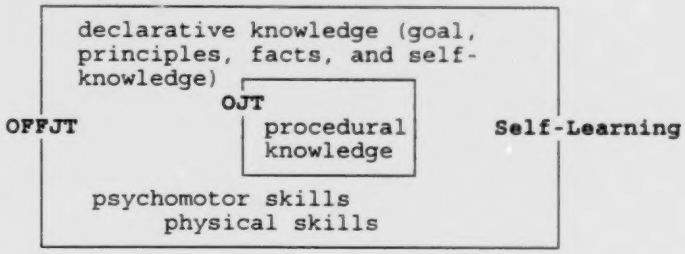
In this definition, the key words are 'planned training,' observation and guided practice, and procedural knowledge. Like other formal training methods, OJT should be planned considering work schedule, human resources, and so on. In the planning step, involvement of top management as well as the line manager and the training coordinator will promote the effectiveness and efficiency of the program (Sullivan & Miklas, 1985). Top management involvement includes establishing the organizational policy which guarantees ongoing company-wide support (i.e., rewarding and/or relieving work load for OJT practice).

There is a Korean maxim which emphasizes the effectiveness of observation in learning: Hearing one hundred times is not as good as observing one time. But a trainer should be aware that his or her behaviors may be very automated and so fast that the trainee cannot follow it. The behaviors may not be able to be done without expertise obtained over a long time with repeated performance. The OJT trainer should know the key portions of learning theories and learner-centered instruction. In guided practice stage, OJT instructors should also supervise the trainees performance for the safety of people and equipment.

The concept of procedural knowledge is based on Anderson's (1985) cognitive model. Anderson divided knowledge into two levels: (a) declarative knowledge about facts and things, and (b) procedural knowledge about how to do something. For example, declarative knowledge about my car includes the fact (there are the gear stick, the brake and the accelerator in the control system) and description of how to change the speed. The procedural knowledge includes being able to change the speed actually. Anderson's (1987) interest was to find out that how procedural knowledge is developed from declarative knowledge and how it is turned into fast, accurate and flexible routines of high performance.

Besides these cognitive abilities, psychomotor skill is also needed in performing tasks. Declarative knowledge and psychomotor skills are primarily developed through off-job training and/or self-directed training. Procedural knowledge connects the declarative knowledge to the behaviors according to the context cues in the work setting, thus, OJT is needed to develop procedural knowledge. Figure 1 relates appropriate training methods to the several components of competencies.

Figure 1. Components of Competencies and Training Method



Target Clients of OJT Most authors who have studied OJT have dealt with simple tasks performed by lower positioned production, lab or shop floor workers working with first-line supervisors (Connor, 1983, 1985; Kruger, 1985; Jacobs, 1987; Wichman, 1989). Several books on OJT have been written for line supervisors: On-the Job Training (Connor, 1983); One-to-One/Step-by-Step (Connor, 1988); and The Supervisor and On-the-Job Training (Broadwell, 1995).

However, considering that the purpose of OJT is to develop procedural knowledge and skills, it is unnecessary to restrict the target population of OJT to lower positioned workers. According to Malcolm (1992), most critical job skills of managers are acquired on the job. If that is true, there is a great need to develop SOJT programs for managers, even CEOs. If successors to CEOs who are going to retire are appointed prior to their retirement, SOJT can be used to help successors understand the whole company and its context cues to assist in carrying out management duty.

Relationship Between OJT and Other Training Methods Some authors (Mangum, 1985) compared the pros and cons of training methods according to the situation, demand, and constraints, primarily considering OJT with OFFJT dichotomously. This may be like comparing bread and butter, both of which have different functions and different dimensions and characteristics. OJT and OFFJT should be integrated to compensate for their weaknesses and to strengthen them. Without obtaining declarative knowledge thorugh OFFJT, OJT cannot be effective because trainees do not know what to do. Without OJT, the content knowledge cannot be applied with high trafer rate on the job. Rackham (1979) reported a case of sales training wherein 35 sales persons' performance was not improved after conventional classroom teaching. The problem was solved with a program designed where managers in the branch were taught methods for analyzing selling skills and systemically training their sales people on the job.

SOJT Steps Earlier, Engel (1958), Gold (1981), Stokes (1966), reviewed by Kruger (1985), emphasized the importance of structuring OJT for an efficient process and effective results. Kruger (1985) summarized the steps and specific actions of each step. The OJT steps include: prior to instruction, instruction, presentation, application and follow-up. Jacobs (1995) provided a OJT process model: decide whether to use SOJT, analyze the tasks to be learned, select, train, and manage the trainers, prepare training modules, deliver the SOJT, and evaluate and troubleshoot the SOJT. These models include similar steps even though they used different terminology.

The above models show the sequential procedure from selecting OJT as the training method to follow-up steps. Jacobs' OJT process model is a single loop. But the procedure does not have to be sequential. When the same or a similar program had been implemented before, the analysis step can be skipped or little adjusted. According to the formative evaluation, the order of steps can be switched or the same step can be repeated.

The present author developed an instructional model consisting of six stages: analyze, design, develop, plan for implementation, deliver, and evaluate (Table 1). The personnel involved in each sub-step are included. Line experts are employees who have sufficient knowledge and skills to perform a specific job anywhere in the organization.

Some authors (Marquardt, 1976; Kruger, 1985) have pointed to a major problem in many informal OJT efforts: line experts, who are often charged with implementing OJT, are not prepared in instructional knowledge and skills. One possible response to this problem is to encourage subject matter experts who are responsible for OJT to take a train-the-trainer program specifically designed for OJT (Jacobs & Jones, 1995). Such a program would be strengthened if competencies needed by line experts for structured on-the-job training (SOJT) were identified, along with those competencies needed by human resource development professionals to support line experts who are doing SOJT. This model (Table 1) will be helpful to identify instructional competencies needed for performing each step.

Table 1

SOJT Steps and Personnel Involved

Step	Personnel
1. Analyze	
- specify organization goals	MN*
- determine training climate	TP**
- analyze the target tasks/task cluster and required knowledge, skills, and attitude for the performance.	TP LE***
- analyze trainee knowledge/skill levels, learning characteristics, and personality	TP, LE
- present training needs and goals to management for approval	TP, LE, MN
2. Design	
- set objectives	TP,
- determine sub-steps of delivery (explain, show, part practice, and whole practice)	TP, LE
- determine delivery media (job guide, CBT, video, one-to-one, etc.)	TP, LE
- determine evaluation methods (written test, performance check list, on-the-job performance)	TP, LE
3. Development	
- develop learning materials	TP, (LE)
- develop evaluation tools	TP, (LE)
- obtain feedback and revise	TP, LE
- pilot test and modify	TP, LE
4. Plan for Implementation	
- check the operation schedule	LE
- plan training schedule (number of trainees, number of trainers and staff personnel, tasks, condition, time, and equipment)	TP, LE
- set the criteria to select trainers, staffs, and trainers	TP, LE
- select candidates for OJT instructor and supporting staffs personnel, and trainees	TP, LE
- provide train-the-trainer programs for line experts	TP, LE

(Table 1 continued)

Step	Personnel
- arrange the workload of trainers supporting staff, personnel, and trainees	MN
- provide appropriate social and physical support	TP, LE MN
6. Delivery	
- place tools and learning materials at training site	TP, LE
- place trainees	TP, LE
- prepare learning place	LE
- deliver training according to design by explaining, showing, guiding practice from whole to part to whole	LE
- monitor the training process	TP, MN
- coach on dissatisfied parts of the trainees' performance	LE
6. Evaluate	
- evaluate the trainees' performance as planned	LE
- evaluate the trainer's instructional performance	TP, (MN)
- evaluate training materials	TP, LE
- evaluate training process	TP, LE
- document training record	TP, LE
- line manager/supervisors' evaluation on the job after training (one week, one month, six months...)	LE, MN TP
7. Follow-up	
- coach as needed	LE
- return to necessary earlier steps	LE, TP
- recognize trainees' completion of OJT (managers' congratulation, certification, promotion, or pay raise)	MN, TP, LE

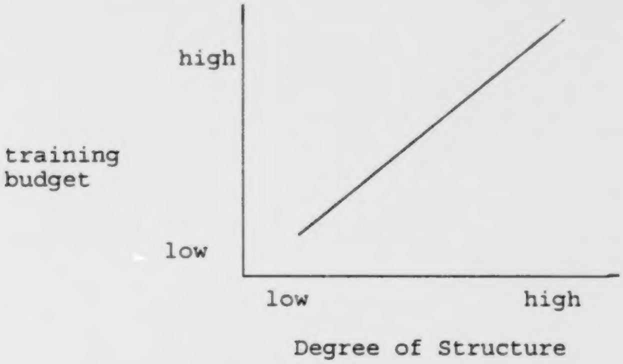
* MN: management, ** TP: training professional, *** LE: line experts

Factors in Structuring OJT

Many authors (Jacobs, 1995; Gold, 1981; Kruger, 1985; Rothwell, 1991b) asserted that OJT should be structured, pointing out the negative results of unstructured OJT. But few of them provided empirical information on low effectiveness or harmful results of unstructured or informal OJT. Why should OJT be structured? Those authors used the terms are planned, organized, formal, and structured interchangeably. Although Rothwell (1991) used a term, "planned OJT" as equivalent to "structured OJT," the present author does not view that planned OJT is necessarily structured. An unstructured OJT program can be planned considering characteristics of the target tasks and economic value of the program. If a training program is more structured, more money will be spent in developing and managing the program (Figure 2). It is unwise to use training budget in formalizing training for few trainees to obtain expertise of simple tasks which are done infrequently.

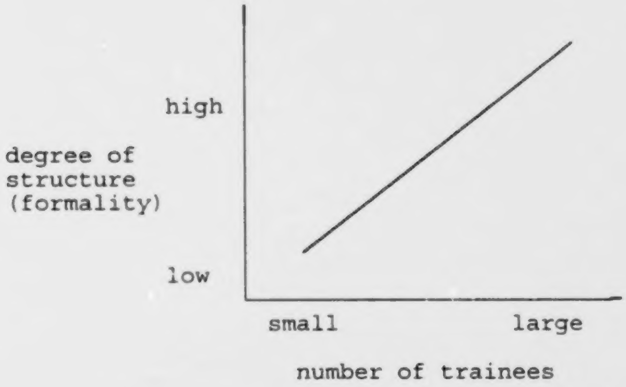
Conceptually, structured training can be differentiated from unstructured training, but it should not be dichotomously judged: structured OJT is good, and unstructured one is bad. A more important issue is how much an OJT program should be structured, not if it should be structure or unstructured. The issue is dependent on other variables: training unit (task, task group, project, or job), number of trainees (small or many), and stability of training content (changing or stable).

Figure 2. Degree of Structure and Training Budget



R. A. Swanson (personal communication, January 25, 1995) developed a three dimensional model: the Training Delivery Method Model. The three variables are number of trainees, content over time, and delivery method. Among them, the first and the second factors are related to the question of structuredness. The more trainees need training and the stable training content over time is, the more formalized training, such as off-site classroom training, is appropriate (Figure 3 & 4). If the number of trainees is small and the target content is changing, unstructured OJT is economic and appropriate.

Figure 3. Number of Trainees and Degree of Structure



Besides economic considerations, characteristics of the tasks are another criterion useful to judge the formality of training. If it is more important to know how individual tasks are to be inter-related rather than individual tasks themselves, the training should be provided in a task group or project as the training unit. Degree of structure correlates positively to size of training units (Figure 5). For some tasks, especially at executive management level, which are be intertwined in a complex way, informal explanation on the job will be more understandable and provide efficient learning. Instructional technologists should be aware of structuredness/formality issues before selecting or developing an OJT program.

Figure 4. Content over Time and Degree of Structure

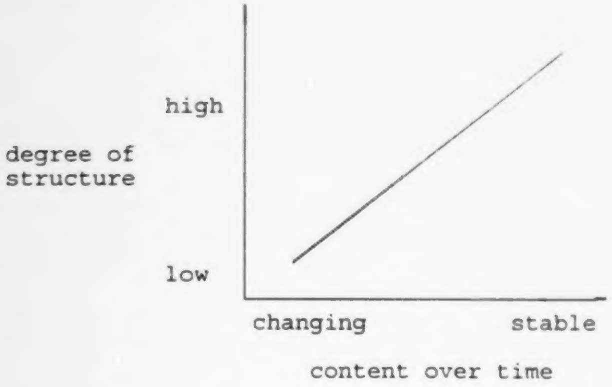
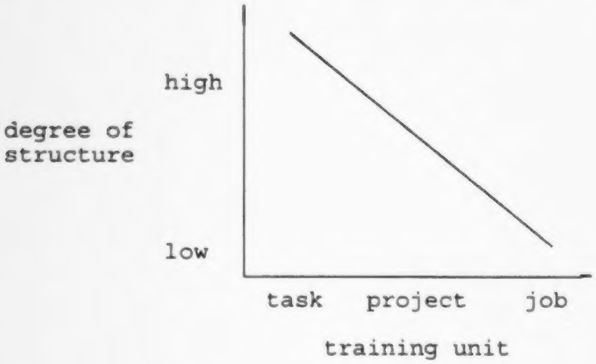


Figure 5. Training Unit and Degree of Structure



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Research: The Thin Blue Line Between Rigor And Reality:

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Wilson Learning Corporation

The ability of the human resource development capability to contribute strategically to organizational growth in part hinges on integrating the research capability into HRD practices. Research technology can potentially play a significant role throughout organizational and individual development, however current perspectives and techniques often limit them to front-end or back-end contributions. Among the challenges facing HRD research is increasing both the speed and rigor of research processed, and helping organizations focus on capability modeling and development impact.

There is a broad range of activities that can be grouped as research within human resource development. Research can encompass theory development, hypothesis testing, needs analysis, instrument and survey development, evaluation and assessment, to name a few. However, whether theory, application, or practical outcomes result, what links these diverse elements is the inevitable tension between the neatness of the research abstractions and the messiness of the reality. Research is the point at which the need to answer realistic questions meets the need for rigorous approach and methodologies. The degree to which these merge or conflict represent, for me, the "Ecstasy and Agony" of working in a research center.

The ecstasies occur when rigor and reality merge. There are few things more beautiful than a solid, research based model or theory that answers important, real, questions. In contrast, what can hold us back is the apparent contradiction between these to values. The need for rigor; statistical validation, conceptual integrity, and measurement precision, can lead us to answer trivial questions. And, the attractiveness of a simple answer to a profound question can lead us to ignore the value of solid research processes.

In some respects the future of human resource development hinges, in part, on our ability to increase the occurrences of this merger and decrease the occurrences of the contradictory relationship. While we all hope that human resource development will increasingly be seen as a strategic resource, with this role comes the need to meet increasingly quantifiable measures of performance and standards of excellence. When once it was sufficient for human resource development to be more art, to be a strategic resource it must be an appropriate balance of art and science.

Research Capability At Wilson Learning

The research practices Wilson Learning engages in are a reflection of the procedures and philosophy that we value. As a result, to discuss the Wilson Learning research capability is to also describe the "ecstasies" that we experience. For Wilson Learning, the research capability has four principle elements

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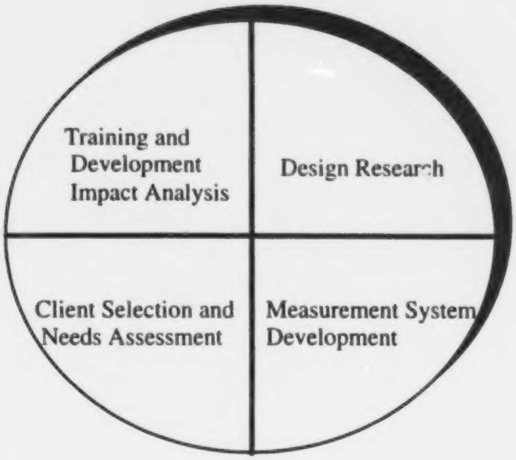
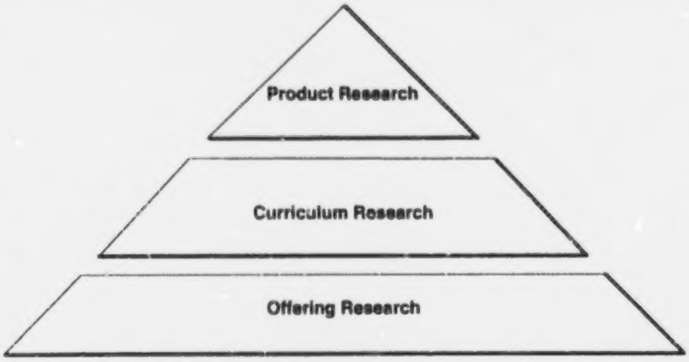

Training and Development Impact Analysis
Design Research
Client Selection and Needs Assessment
Measurement System Development

Design Research. We have found that the most successful program development efforts emerge when design research is an integral part of our ongoing research and development effort. The primary purpose of design research is to insure that the content, models, and perspectives we take on an issue are supported by research or existing theory. We have developed our design research capability to address three distinct levels of analysis.

Offering Research. At the broadest level offering research is our way of staying well informed of the changes facing organizations in the domains in which we operate. We conduct literature reviews and meta-analysis of client specific research to identify new technologies, models, or paradigms for a particular domain such as sales effectiveness or teamwork.

Curriculum Research. Curriculum research is a narrowing of focus to a particular capability but also an expansion of the research efforts to include both quantitative and qualitative primary research, concept tests with user audiences, and confirmation of the accuracy of predictive models through our database analyses.

Product Research. Finally, at the product level, we test and research specific instructional methodologies and models. The effort is to insure that the content of the program is accurate and effective. At this level we further narrow the focus to a particular set of performance outcomes, but direct specific research to confirm the value of these outcomes, developmental pilot research, participant reactions and knowledge gain research.



The vision of our design research effort is to continuously search for the elegant perspectives and models to direct our program development efforts. We use the term elegance to communicate the value we place in models that are simple but rich in application. Our best efforts have been based on models or concepts that are easy to understand and remember but continue to speak to people throughout their lives.

Measurement System Development. Wilson Learning's Research capability began 20 years ago with our development and validation of measurement systems. Currently, WLC has approximately 20 individual measurement system products and over 60 cultural adaptations of these produces for other cultures and languages. Development of new measurement systems continues to be our primary research function. For Wilson Learning the purpose of a measurement system is to provide a framework for gathering data about performance factors and converting the data into useful information leading to action. Some use terms such as instruments, feedback instruments, and surveys to describe this domain. We prefer the term measurement system because to move from data to action requires more than a survey, but a system of components that include questionnaires, data collection processes, reporting processes, and interpretation guides.

Our measurement systems focus on individual, team and organizational needs and take many forms including self-assessments, "360 degree" feedback, objective measures and expert observations. These measurement systems are designed to serve our clients to help diagnose improvement needs, to provide valid information to support a learning event, to guide development and action planning, to evaluate the outcomes of learning processes, and to determine alignment of markets, strategies, global operations, organizational capabilities.

All of our measurement systems are developed within the context of a common philosophy concerning what makes effective measurement.

Useful, Reliable, and Valid	**Appropriate Sources**
Actionable	**Appropriate Information**

Useful Reliable and Valid. One of our core values is that the only useful measurement system is one that has a high degree of validity, but validity itself does not guarantee usefulness. To develop people based upon measurement results that are not valid can misdirect development efforts. But to provide valid information that does not accurately reflect the participant's own world, or is not actionable, serves no ultimate purpose. We believe that it is important to go beyond content validity in our development efforts and conduct construct and predictive validation studies of all of our measurement system products. But concerns over validity do not take precedence over the need to have the measurement reflect the participants real world.

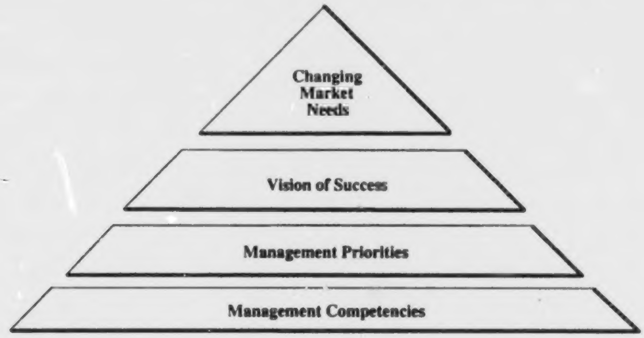
Appropriate Sources of Information. While 360 degree feedback processes are popular, we have long followed a perspective that different sources have different perceptions and information. Our measurement systems are designed from the perspective that identifying the most appropriate sources of information is as important as identifying the information content itself.

Appropriate Amount of Information. We have found that differentiating between data, information, and knowledge is critical to successfully communicating the results and value of measurement. We place a great deal of emphasis on assuring that the information presented does not paralyze action, but invigorates it.

Actionable. Our final core principle is that measurement that does not lead to action has little value. Part of the art and science of measurement system development is in presenting information in such a way at to link to meaningful performance outcomes or strategies and help the individual or organization construct a chain from data to action.

Client Selection and Needs Assessment Studies. Paralleling our measurement system capability is our research services capability, in which we deliver to customers research analyses that assist organizations in selecting employees for hiring or promoting, or identify, analyze, and assess organizational or developmental needs. As with the measurement systems, our client research capability is driven by a sent of core principles.

Linking Client Strategy to Behavior. While ultimately the purpose of selection or need assessment research is to understand actions and processes, we believe that these must be understood within the context of organizational performance. When we conduct a study for a client, we always incorporate the components of the following model.



Only by beginning the process with an understanding of the organization's market needs and how the organization creates its vision of success to meet these needs, can we then begin the process of understand how management priorities and competencies support that vision of success.

Multi-Source and Multi-Methods. The Wilson Learning client research services capability grew up largely around a software program and process we refer to as the Innovator®. The Innovator® is the marriage of a Group Decision Support Tool (See Poole, 1991 for a description) and a flexible set of research protocols that incorporate the best of qualitative and quantitative analyses. We have found that the most effective research processes allow for different stakeholders to drive the discussion points, capture a richness of description and content, but also provide the objective elements of ratings, ranks and standardized measurement scales.

Training and Development Impact Analysis. In an effort to help clients make informed decisions, WLC conduces evaluations of its training and development programs to determine the impact they are having on organizations. Among others, our evaluation activities include:

- Ongoing participant reaction surveys for all of our programs.
- Analysis of measurement database to determine behaviors changes that result from training.
- Special studies linking training effects to strategic outcomes.

One of the significant insights we have gained was a recognition of the need to address different levels of intervention with different evaluation outcomes. This was in part driven by a level of discomfort we felt when we provided clients with an ROI analysis for an individual training program. In our hearts we new that a training program itself does not drive to performance outcomes. Only when a program is part of a broader curriculum or system did we feel justified in claiming credit for improved bottom or top line outcomes. This insight let to the development of this impact evaluation model.

	Development Systems	Development Curricula	Development Programs
Satisfaction (Reaction)	Satisfaction with HRD strategy and operation.	Satisfaction with offering.	Satisfaction with events.
Competence (Knowledge) (Attitude)	Linkage between CSF and competencies.	Skill and competency development.	Knowledge and attitude development.
Performance (Behavior) (Results)	Link with business performance impact.	Job performance impact.	On-the-job actions.

Challenges Facing Research Capabilities

Most of the "ecstasies" we have experienced are imbedded in our approach and philosophy to research. In addition, our "agonies" are less a reflection of concerns or problems but more reflective of cross-roads that we see before us. There are several issues that represent critical junctures. One rode will lead us to a merger of rigor and reality, the other to either a lack of rigor or a separation from reality.

Linking Training Needs to Organizational Strategy. Research efforts that focus exclusively on skills or actions are fundamentally flawed! While ultimately the purpose of research is to understand actions and processes, these must be understood within the context of organizational performance. Too often we treat research, especially need analysis, as only a process for identifying skill or competency gaps. We often fail to also ask whether these competencies need to be performed at all. In other words, central to the needs analysis research process should also be the question of how the skills and capabilities contribute to organizational performance and success. Ultimately, the behavioral practices of the individual are (or should be) linked to customer satisfaction, but rarely does needs analysis research include customer input, unless it is a direct service role. David Kearn (CEO of Xerox Corporation) suggested this when he said: "The strategy of the company, the direction of the company, and the skills and behaviors that people need ... should all be combined and integrated" (Galagan, 1990).

If we view the research process more as the thread that links the organization's market, strategy, and critical success factors to HRD practices, and less as a "front-end" process, we would more successfully provided the value expected from the research process.

Concern With Training Impact. Over just the past five to seven years, we have seen a great increase in organization's interest in and desire for data to demonstrate the impact of the training on performance. Unfortunately, it has been our experience that while many organizations want to know that programs are effective, few are willing to pay the price to actually find out. They rely instead on antidotal information, poorly designed research, or estimates for ROI based on subject matter expert evaluations of value. There is little guidance for organizational decision makers, or even HRD professionals, to separate research that accurately demonstrates the impact of the training through rigorous design from research that is non-generalizable, confounded, or does not in fact have data to support their contentions.

A case in point is a competitor of ours in the sales training arena. As part of their program, they have salespeople develop a case analysis of a particular sales opportunity. In this analysis the salesperson records, among other things, when the client will probably make a decision. To prove to a client that they have evidence of effectiveness, they do a follow-up phone call with the participants. They ask the salespeople two simple questions: "Was the sales a success?" and "How much revenue was involved?" They then take the total revenue from successful sales, divide by the costs to train the salespeople, and report that result to the client (and others) as the ROI. In other words, if the sale occurred after the salesperson attended the class, the sole cause of winning that sales was the training program.

Speed and Rigor. Jeremy Rifkin (1987) suggested that speed, more than anything else, defines our culture in the 90s. Our business world, as well as society in general, seems obsessed with speed. Time to market, development cycle time, production time, and other time frame issues occupy the executives mind more than anything else. D'Aveni (1994) has even suggested that "Speed" should replace at lease one of the "S's" in the McKinsey 7-S framework.

As companies careen toward the future, They will look upon our research methodologies as to cumbersome and slow. Unfortunately, there is a perception (and to some degree, a reality) that systematic research takes so long that once the research is done, the skills and practices are obsolete because the market has changed. Or, as David Kearn said "The toughest problem that training professionals have within a company is how to interpret and integrate new ideas into the training and how to do it quickly" (Galagan, 1990).

Organizations are no longer able to wait six to twelve months to research, design, develop, and deliver training and development programs. Not conducting the needed research is not an issue of money or desire, but of time. We greatly need to develop rigorous research processes that reduce the time between when the organizations ask the question and when the researcher can provide an actionable answer. Otherwise, organizations will turn to less reliable, but faster processes to collect information for making strategic HRD decisions

Capability Modeling. While significant modifications have been made over the years, the fundamental principles of how we organize our understanding of human resource development is still rooted in the principles of Frederick Taylor, Eli Whitney, and Adam Smith. Unfortunately, the Taylor/Whitney/Smith model of the organization was build for a time and a set of conditions that no longer exist. While far from an exhaustive list:

- Individual performance is rapidly being replace by team performance.
- A number of authors (e.g. Torraco, 1994) have focused our attention on the disappearance of the "job" within today's business structure. In today's organization the job is simply too fluid to be a meaningful starting point for HRD research analyses.
- Functional lines of control and management have or are being replaced by cross-functional leadership or process oriented structures.
- Work goals and objectives change rapidly to meet changing market needs. I don't know anyone today who has a job description that matches what he or she really does.

Yet, most of our research paradigms today tend to assume the tenants of the Taylor/Whitney/Smith model. We conduct job analysis, we conduct job needs assessments, we evaluate the impact of training on individual performance improvement, we research functional competencies. We have all lamented when we realize that our subject population has been reduced because half of the people are no longer in the job we are studying, but we tend not to question whether we should be studying jobs at all. By selecting people for jobs, or designing research studies around a job defined sample, are we researching something that is no longer relevant?

In Summary: Research Standards? In many respects, part of the answer to these issue might be to look closely at the standards that define research practices in human resource development. Give this cross-roads we are facing, should we consider clarifying some of the following?

- Measurement system standards: What represents minimal levels of validation for different purposes? The only ones that exist today are for selection and those are primarily focused on meetings legal challenges and EEOC standards of non-discrimination. What about standards for diagnostic, feedback or other forms of measurement?
- Should there be standards to recommend that needs analysis and assessment process link to organization performance, strategy and/or market needs?
- Should there be realistic standards or recommendations for researching and reporting training effectiveness research? And, should there be an evaluation of current effectiveness reports?
- Should we include speed and customer satisfaction as requirements of effective research?

At the same time, we need to forge a new perspective on standards themselves. While we need to communicate definitions and suggested procedures for conducting, reporting, and comparing research efforts, these cannot be communicated as ridged requirements.

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Zenger Miller's Research Center: Mission, Strategies, Agonies, and Ecstasies

Darlene Russ-Eft
Zenger Miller

This paper reviews the work of the Research Center at Zenger Miller. It presents the history and mission of the center. It reviews some specific projects, including research on positive versus negative models; the measurement of the benefits and costs of interpersonal skills training; the prediction of organizational orientation to teams; and organizations' experiences with the strategies of TQM, teams, and process management. The final section describes some of the agonies and ecstasies of working in this environment.

One advantage or disadvantage of working in a private company is that you find little time to spend reflecting on the past. Most of your time focuses on dealing with the present and planning for the future. This symposium has given me the permission to indulge in a moment or two of reflection.

I will begin by reviewing some of Zenger Miller's history and the research function within it. I will then share the mission statement of the Research Center. A review of some example projects will follow. With all this as background, I can come to the major point: the Agonies and the Ecstasies of running a research center.

History

Jack Zenger and Dale Miller founded Zenger Miller in 1977 as a consulting company. They found that their clients demanded a supervisory skills training program that provided the "how-to" skills that enable participants to perform at exceptionally high levels. Unable to find any that met client needs, Zenger Miller formally entered the packaged training arena in 1978 with its own supervisory system.

In the earliest days, Zenger Miller assisted clients in determining whether training led to behavioral changes. Such research efforts were typically undertaken through contracts with researchers or graduate students.

A formal research function began operating at Zenger Miller in 1984. That research group continued to support training evaluation efforts at client companies. In addition, the research focused on issues related to product development.

In 1987 the Research Center evolved into an operation that began to focus more and more on the external customer. The Zenger Miller Research Center began offering research services in the areas of needs assessments, training evaluations, and multi-rater assessment. For the next several years the Research Center continued to concentrate efforts on client-directed research projects.

A change in direction occurred in 1992 out of the recognition that internal customer needs were receiving low priority. So, more resources were allocated to answering the information needs of customers within Zenger Miller. In the initial stages, the primary internal customers came from Product Development and Marketing.

During the past year, the Research Center's internal focus has expanded. In addition to Product Development and Marketing, the center provides consulting and research services

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to all groups within Zenger Miller. In addition, the center recognized the importance of providing research support to the Times Mirror Training Group, since Zenger Miller is one of four training companies forming this group. Therefore, beginning last year, we undertook research efforts on behalf of and in conjunction with our sister companies.

Mission

Each year the Research Center staff reviews our mission statement. We all feel that such a review is important in helping to establish a direction and priorities. Because of its importance, we have, in some years, undertaken this review as a center initiative. In other cases, this review has become part of the larger strategic planning within all of Zenger Miller.

The following are some excerpts from the 1994 mission statement:

> To address important issues which can be acted upon to lead to improved quality of life within organizations.
>
> To provide fast turnaround, actionable research to enable Zenger Miller to make informed decisions.
>
> To educate Zenger Miller, our clients and the world about the benefits of research.

The statements reflect our belief that we conduct each of our research projects to yield some tangible benefit and to make a difference within the larger society.

Example Projects

Positive versus Negative Models. One of our early studies focused on gaining further understanding of the benefits (or lack thereof) of positive and negative models. The study began with an extensive literature review and contacting of researchers in the field. Surprisingly, we found limited resources. Though we have heard many opinions, we found only one formal study testing positive and negative models (Alssid & Hutchingson, 1977), and that study was focused on counselor training. To facilitate this research effort, we edited existing videos to yield four types: a positive model followed by a positive model, a positive model followed by a negative model, a negative model followed by a positive model, and a negative model followed by a negative model. Zenger Miller researchers used these videos with training individuals in one or more sets of key behaviors over the course of a three-week period. At each session, participants were tested for recognition, recall, and performance. In addition, we made these tapes available to university researchers.

The following are some of the major conclusions from this research effort: (1) recall, recognition, and performance for those seeing the negative/negative models were at a lower level than for those in the other conditions; (2) people in the other three conditions displayed similar levels of recognition, recall, and performance -- after the second model; and (3) the mixed conditions of positive/negative and negative/positive appeared to aid learning when key behaviors are subtle or ambiguous. These results (Russ-Eft & Zucchelli, 1987) and subsequent research provided Zenger Miller with some guidelines for the development of training videos using behavior modeling.

Return on the Investment for Training. Regardless of the type of training, organizations are concerned with measuring the impact. Interpersonal skills training provides a particular challenge when calculating the return on investment. To provide the client with needed information and to develop a model for measuring the return on the investment for interpersonal skills training, Zenger Miller researchers assisted a client in conducting a cost-benefit study (Russ-Eft, Krishnamurthi, & Ravishankar, 1994).

The client organization provides information services, through publications, software, and other services. Trainees came from the professional and support levels within the organization. Control groups included people from similar functions who were scheduled to take training at a later time. Ratings of on-the-job behaviors centered on four areas: dealing with problems, communicating with coworkers, working with superiors, and improving work. These ratings were completed by the target groups, as well as by their supervisors and colleagues. We converted skill improvements into dollars using information on the percentage of time spent by each trainee on the skill area when on the job, together with that person's salary. Costs for the training included the material costs and the time costs.

The major conclusion was that the interpersonal skills program had a positive effect on the bottom line and that the HRD expense was justified. After training, trainees were using the skills more often and more effectively than the control group.

***Orientation to Teams*.** The Research Center conducted a series of studies examining factors critical for the success of self-directed work teams. Researchers and experts in self-directed work teams conducted one to two day site visits to each organization or organizational site. During these site visits, data were collected through interviews with key executives, focus groups with managers, focus groups with associates, questionnaires for managers, and questionnaires for associates. Researchers and consultants in self-directed work teams analyzed the data and provided each organization with recommendations to advance the development of the teams. At the conclusion of 10 such organizational studies, separate database analyses were undertaken. One such set of analyses focused on identifying the factors or conditions that best predict the organizational orientation that favors teams (Russ-Eft, 1993). The five best predictors were: relationships within organization-wide management, innovation on the job, control of work by the immediate manager or supervisor, group cohesiveness, and open group process within the work group.

***Quality, Teams, and Process Management*.** Another research project focused on emerging trends in teams and total quality management (TQM) initiatives (Moran, Hogeveen, Latham, & Russ-Eft, 1994). Specifically, this effort focused on determining the factors associated with the adoption of TQM and teams efforts, the success of TQM and teams efforts, and the management of strategic processes.

A questionnaire was mailed to 4,500 potential respondents across North America. The survey yielded a 22 percent response rate. In addition, we undertook a non-respondent follow-up. Using techniques developed for the Census Bureau and the National Center for Education Statistics, we adjusted the statistics to account for non-respondent bias.

The major conclusions were as follows. First, the adoption of TQM, teams, or process management is pervasive; furthermore, more than 50 percent of organizations implement the three efforts together. Second, the greatest successes were reported by organizations adopting an integrated approach to the various initiatives.

***Review of these Examples*.** The previous description of some research projects provides a picture of the types and range of projects that the Research Center undertakes. Although many of the projects tend to be quantitative in nature, we also use qualitative methods. Some of the studies use experimental designs; others use survey research; and still others use observational techniques. In all cases, however, the major purpose is to provide the client with information that can be used for decision-making.

The Agonies

The Zenger Miller Research Center provides practical solutions and information to its internal and external customers. A major agony involves the researchers' need for the bigger picture when responding to requests. A first question that we like to ask is, "So, why do you need this information?" And the second question is, "What do you plan to do with it?" In some cases, customers seem reluctant or unable to clarify their requests. This may come from a lack of planning or from a desire to get started NOW.

Another agony involves the differing perceptions of "quality" by the Research Center and by both internal and external customers. For example, the checking, double-checking, and triple-checking of data and analyses by researchers can lead to some increases in time and costs. And, in some instances, the customer may see little value, particularly when the correction may only change a figure in the second decimal place.

Finally, being "overworked and underpaid" can be considered another agony associated with working at the Research Center. The multitude of high priority research projects demands full time and attention. This leaves precious little time for preparing publications for the research community. In some instances, the researchers literally feel that they are "sneaking away from work" to prepare an important research paper.

The Ecstasies

Having said all this, however, I must conclude that the ecstasies outweigh the agonies. One of the most gratifying rewards is the use of research results for decision-making. Previous personal involvement in major government research studies that resulted in reports sitting on a shelf has prepared me for understanding the limited use of research results. Therefore, the other researchers and I experience a great deal of satisfaction when we see the results of our labors being used to drive decisions within Zenger Miller.

Collaboration with both internal and external customers is also a source of satisfaction. We find that our customers are among the wisest, most intelligent, and most caring in the world. Working with such customers expands our thinking and action.

Similarly, collaboration with other researchers provides benefits in both directions. Such collaborative efforts include working with graduate student interns, supporting other graduate students in the development and conduct of masters and doctoral dissertations, and developing joint research projects with researchers in other organizations. In all these instances, we learn a great deal from each other.

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ASTD's Research Program: Performance and Workplace Learning

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American Society for Training and Development[1]

Responding to increased global competition, businesses are striving to increase performance to retain a competitive advantage. ASTD is uniquely situated as a leader in improving performance in the workplace. ASTD's research program is working within a global context, from a systemic perspective to build the knowledge base necessary to link research, policy, and practice in three key areas: performance, learning, and training.

The Context: Global Changes and the Quest for Performance

Global competition has radically transformed the nature and organization of work worldwide. Increasing global and domestic competition assure that the rate of change will increase and intensify for the foreseeable future. In response to these changes, businesses are striving to remain as competitive as possible. The movement toward continuous performance improvement further heightens international competition. Other drivers of change include advances in technology, pressures to restructure in financial markets driven by changes in ownership structure, an increasingly skilled workforce, and changing ideas about the organization of corporations.

In response to international competition and pressures to increase shareholder value, performance, and profits, companies have downsized to reduce costs and introduced new forms of work organization, and principles of organizational design. Efforts to reduce costs and improve operating efficiencies have focused attention on rethinking the tasks that organizations need to perform. Companies have turned to reinvention, reengineering, revitalization, and transformation--leading to fundamental changes in how work is organized, how leadership is practiced, how mission is articulated, and how culture is created. These change strategies reflect a conviction that systemic responses are required to increase performance in the face of continual global change.

Quest for Performance

The quest for performance--the push to deliver even greater competence and sustained productivity in the workplace--has led companies to undertake radical internal change in response to global change. Companies have responded to a whirlwind of new demands, but often the productivity gains have been modest--or only short term. Reinvention and transformation are means in the search for improved performance.

A powerful component of performance improvement is learning, which is being reengineered in high performance companies, as never before, to get knowledge, skills, and intelligence into the hands of the workers and teams, when and where they need them.

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[1] For fifty years, the American Society for Training and Development has been the leading professional association for workplace learning and performance.

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ASTD's Role in the Context of Global Changes

ASTD is committed to envisioning the workplace of the future and to helping companies prepare to meet the performance demands of that vision. ASTD is a forum where all these performance stakeholders and ideas come together -- a global link for building and sharing new strategies for performance.

ASTD is uniquely positioned among organizations:

- in its ability to provide leadership in improving performance in the workplace;
- in reaching learning, management, and performance leaders in companies, industry associations, governmental and policy organizations, and universities;
- in focusing on the developmental needs of human beings in organizations, in contrast to other societies which focus primarily on the tools for workplace learning and performance;
- through its multi-level access to those who think about organizational systems and change from the top down and from the bottom up;
- and through its links with American and non-American actors concerned with workplace learning and performance.

ASTD stands at the center of the performance/learning nexus, helping companies understand performance from both a developmental and a systems perspective, helping them shorten the loop that connects learning to working, serving as a preeminent catalyst for building intellectual capital to support performance, and supporting specialists in human resources, learning, training, and performance who want to be tomorrow's leaders in reengineering learning to deliver performance.

Through research, invitational symposia, publishing, and on-line learning and worksharing among practitioners and leaders, ASTD is continuously building the knowledge base that fuels performance enhancement in the workplace.

Among businesses, in government, and within the human resource development profession, improved performance is increasingly viewed as the key to competitiveness for individuals and organizations. As the leading professional association in a field that is undergoing rapid change, ASTD, through its research program and the products that result from it, will contribute to the knowledge base that fuels performance enhancement in the workplace.

ASTD's Research Program

The research program plays a pivotal role in building the knowledge base to support ASTD's performance enhancement mission. In its research, ASTD strives to break new ground in understanding the systems dimensions of performance; in articulating the differing requirements of individual, team, and organizational performance; and in defining the links between performance and learning.

Mission and Strategies The overall mission of the research department is to support ASTD as a leader in improving performance in the workplace. The research program uses several key strategies to achieve this mission:

- concentrating on key emerging issues -- high performance workplace systems, new and old learning models, and the volume, impact, and distribution of training -- from a performance perspective;
- working to expand alliances with U.S. and international institutions to gain access to research and to leverage ASTD's research impact, visibility, and dissemination capability;
- convening researchers, policy makers, and practitioners in the field of workplace issues to continually integrate knowledge, and bridging research, policy, and practice;

- seeking to establish itself as an international clearing house for knowledge and best practice information on high performance workplace systems and new models of learning;
- and positioning it within the information highway by developing new on-line products from research, establishing local, national, and international on-line networks of researchers and practitioners to exchange information about improved performance in the workplace.

Principles/Assumptions Several assumptions guide the research on learning and performance in the workplace that ASTD conducts.

ASTD's research agenda responds to trends in the field. The changing trends in business, technology, and training have significant implications for human resource professionals. A central assumption of ASTD's research is to clarify the meaning and implications of these trends for performance. ASTD's research program focuses on the concerns of multiple constituencies, including new and old members and customers. Trends suggest that the role of the trainer is being transformed, becoming more flexible, and that there may be less emphasis on training *per se*.

The context for ASTD's research on workplace learning is the global system; international comparisons are be included whenever feasible. ASTD's research program has a systemic orientation, with research activities focused on aspects of workplace learning and performance in the context of organizational performance and/or change.

Collaboration with researchers, practitioners, and policy makers is essential. ASTD's research program is committed to the principle that the agendas for research and ideas to pursue will arise out of collaboration with those who will use the results. A commitment to early collaboration in research programs among the users and producers of knowledge contributes substantially to ASTD's objective of conducting applied research that bridges theory and practice.

ASTD's research agenda is comprised of projects on performance, learning, training, and the links among them.

ASTD Research Projects

Performance

Diversity. Globalization and increasing ethnic and gender diversity in the workforce are the impetus for the current focus on the management of cultural differences. Managing diversity is essential to improved performance. With support from the Department of Labor and the Joyce Foundation, ASTD has investigated the sources and nature of increasing diversity in the American workplace. The findings, published in *The American Mosaic: An In Depth Report on Diversity in U.S. Workplaces* (forthcoming), show that the impetus for the dramatic increase in companies' interest in diversity initiatives in the 1990s stems from the recognition by companies that valuing and managing diversity can enhance organizational effectiveness and create a competitive advantage.

ASTD's research suggests that the goal of managing diversity is to maximize organizational performance by capitalizing on the benefits of a diverse workforce. We know from research and practice that employees who live and work in integrated settings develop stronger interpersonal and communication skills and become more effective inside and outside of work. Moreover, during the past few years, it has become increasingly clear that companies that perform diversity and related human resource work significantly outperform those that do not, when measured in terms of financial performance, and recruiting and retaining a high quality workforce. In the long term, well managed diverse teams typically outperform homogeneous teams in the quality of their work and decision making. This is partly due to the variety of perspectives brought to issues, higher levels of critical analysis of alternatives, and lower probability of premature consensus in the interest of group cohesiveness.

Successful companies realize that managing diversity is not accomplished by a one-time program, but typically requires a long term comprehensive organizational change process. Research reveals that training is often the first step in such a process, followed by comprehensive organizational cultural assessment, obtaining the action-oriented commitment of the leadership, assessment of the results of the diversity program by establishing meaningful numerical goals and monitoring progress in meeting them, and finally, developing initiatives that are strategically linked to organizational needs, organizational culture, and business goals.

To assist businesses in achieving these goals, ASTD has compiled strategies and resources for addressing diversity issues in the individual, interpersonal, and organizational spheres. In *Tools and Activities for a Diverse Workforce* (forthcoming), ASTD brings together diversity tools and strategies used by the nation's top employers and diversity specialists in order to increase performance in an increasingly diverse workplace.

ASTD's research will continue to focus on diversity issues and in its research on high performance work.

High Performance Work. Diversity is only one element in the current emphasis on improving performance. In addition to achieving a competitive edge through managing a diverse workforce, work needs to be reorganized in order to promote creative employee involvement, provide continuous learning, and to elicit enhanced performance. Thus, a second strategy increasingly employed by businesses to achieve competitive advantage through improved performance is the introduction of changes designed to create high performance workplace systems.

With support from the Department of Labor and the Joyce Foundation, ASTD has investigated the restructuring of work and the impact of high performance workplace practices on managers' assessments of improvements in performance and productivity. The resulting study--*The Reorganization of Work: What Works in High Performance Workplaces*--is based on a survey of 239 organizations that identified themselves as having undertaken some type of restructuring. The study considered who initiated the restructuring, what caused the beginning of work improvement, and what were the goals of the restructuring. The study investigated components that are believed to be part of high performance work, including organizational characteristics, technology, restructuring practices, and strategic change management.

Results of ASTD's study, and others like it, are essential to the understanding of how a high performance workplace operates. Much of the research to date on high performance work has focused on specific workplace practices--such as empowerment, teamwork, flatter organizational structures, and enhanced communication. An accepted definition of high performance work does not exist; existing definitions typically identify sets of elements, components, or practices that are thought to characterize high performance work. The challenge before ASTD is to synthesize and assess existing theory, research, and practice about high performance work systems. ASTD aims to define high performance work systems, guide the application of underlying principles in the workplace, and influence policy to promote an environment fostering improved performance for American business and workers.

In a series of workshops during 1995, ASTD will create a forum in which researchers, practitioners, and policy makers can discuss these issues. A larger conference in the winter of 1995 will bring together these perspectives and link the research, practice, and policy issues surrounding high performance work. In convening these meetings, ASTD is collaborating with leading organizations and researchers working on high performance work issues--including labor and industrial relations economists, organizational psychologists and sociologists, and human resource specialists. This collaboration will be a crucial step in the process of defining high performance work, understanding current practices, and creating environments that promote improved performance. An effort to help clarify the state of knowledge and practice in this area, these workshops will build on a white paper on high performance workplace systems that will published by ASTD in the Spring and the International Conference Session on the High Performance Workplace, in June, 1995.

Managing Change Toward High Performance Work Systems. In addition to the several synthetic papers that will result from these activities, ASTD is planning to produce a practitioners' guide on the transition to high performance work systems to assist businesses and consultants in moving toward high performance work systems and improved performance.

In preparing this guide, ASTD will investigate new and old approaches to systemic organizational change that integrate technology and learning in the workplace to create high performance work organizations. ASTD may review and synthesize the published body of knowledge. It may also convene individuals, many of whom are ASTD members, to discuss new approaches to systemic change which they are active in developing. These activities would enhance understanding of the challenges of implementing large scale change in organizations today.

Learning Continuous learning in the workplace is another key component of obtaining competitive advantage in an era of rapid global change. Advances in basic research during the past two decades have transformed our understanding of modes of thought, kinds of intelligence, kinds of knowledge, learning processes, human development, and motivation. These new understandings have important implications for workplace learning. The nature of learning in the workplace is also changing. Learning is becoming more integrated with work. Self directed and team learning are replacing classroom training. There is new interest in group and organizational learning. The content of learning and training is shifting away from skill building and information transfer.

New Models of Learning. Several ongoing research programs are attempting to integrate (and refine) advances in basic research on cognition, learning, and development through their investigation of learning in workplace settings. ASTD's research program is reviewing this work, synthesizing old and new research on individual, group, and organizational learning; and clarifying the implications for effective learning and performance in the workplace.

A collaborative, multidisciplinary approach to learning in the workplace has not been extensively applied in traditional research on learning. The focus has been in terms of "school" learning, either elementary or continuing adult education. However, the average person spends learns more of his/her life in the workplace than in school. To realize the goal of life-long learning, more researcher and practitioner efforts should be focused on workplace learning, and its role in the high performance organization. ASTD is currently identifying the most promising areas for future research.

Addressing the breadth and complexity of workplace learning necessitates collaboration between researchers and practitioners. Researchers have developed a substantial amount of learning theory. Practitioners have similarly produced a significant set of learning methods. The challenge for ASTD is to integrate these ideas and to approach research on learning from both viewpoints. Researchers tend to test theory in experimental settings that fail to allow for the social and contextual basis of learning. Practitioners generate methods based on workplace experience, but the individual elements with the greatest impact are not often identified. ASTD's program will include collaborative research that attempts to bridge the gulf between theory and practice.

A gap in the current work of researchers and practitioners is a lack of multi-level analyses. What is the impact of individual learning on group learning? on organizational learning? ASTD's research will work toward identifying research methods that use a multilevel, systems approach. Organizations have an enormous impact on learning. What can organizations do to support workplace learning as they strive for high performance? Questions, such as this, need to be addressed.

Studying learning within the context of the high performance workplace requires that we reassess our measures of learning. Tests to measure the amount of knowledge that an individual has acquired do not necessarily transfer into increased performance. Researchers at ASTD are looking to develop long-term studies that address the issues of transfer and that take into account the possible multi-level effects of training and development.

ASTD is identifying these gaps in existing research by reviewing and synthesizing the old and new theories of learning. An experiential session at ASTD's International Conference in June, 1995, will further explore new models of learning through the lens of technology, identifying the nexus of learning theories and technology. Through a series of working papers and interpretive papers, ASTD is also studying the links between learning and high performance workplace systems to identify ways in which learning can improve performance.

Learning in the Service Industry. Some of the most convincing research on workplace learning and performance focuses on particular industries. Most of the existing work on high performance practices has focused on manufacturing enterprises such as the steel and automobile industries because differences in productivity between firms in the same industry are especially illustrative since production technology and products are similar. Issues of workplace learning and training have received much less attention in service industries than in manufacturing enterprises. Yet, service industries have become the major producers of GNP and new job opportunities in all of the advanced industrial societies. Some have argued that the revolution in information and communication technologies has made knowledge the new competitive resource and is blurring the traditional distinction between manufacturing and services as manufacturing companies increasingly build services directly into their products.

ASTD is reviewing what is known about learning, productivity, and performance in different service industries and activities. An important focus of new work will be the links among learning, technology and performance. Given the importance of service industries and activities in the U.S. and other advanced industrial economies, this research will be a valuable contribution to the field.

Technology. As technology transforms the logic of competition, some have argued that technology itself disappears as a sustainable source of competitive advantage, driving the logic of the new economy to the next step -- to people and their learning. The primacy of knowledge requires managers to rethink the fundamental practices of management. ASTD's research on technology and workplace learning will explore the links between new technology, workplace organization, and workplace learning. Further exploration is needed of the implications of new technologies and the increased use of technology for improving learning and performance in the workplace, and for the design and delivery of training and learning systems.

To achieve synergy between technology and human capacity, we need to understand better human cognitive and social processes as well as the human-technology interface. Advances in the study of perception, cognition, and human performance can aid in the design of complex information systems. At the same time, more research on cognition, perception and human performance in applied settings is needed to answer the challenges posed by placing such information systems into diverse work settings. ASTD's research is addressing the reciprocal relationships and interactions between people and technology, and the important implications for training in the workplace.

Training Training has also been dramatically transformed by the economic globalization. With support from the Department of Labor, from 1986 - 1990, ASTD undertook a study of *Training for a Changing Workforce.* Collaboration with expert advisory panels and networks of leaders from business, government, labor, and education produced three interim reports: *Workplace Basics: The Skills Employers Want, The Learning Enterprise, and (Training Partnerships: Linking Employees and Practices and America and the New Economy.* From 1986 to 1990, ASTD mapped the size and scope of training in organizations, offered policy recommendations for industry, government, and education, examined technical training, developed a model for establishing a workplace skill program, and outlined the new strategies, technologies, organizational structures and skills necessary for survival and growth in the new economy. ASTD's assessments, analyses, and policy recommendations for training in America appeared in a series of five books: *Training in America, Training in the Technical Workforce, Workplace Basics, Workplace Basics Training Manual, and America and the New Economy.*

A major wave of restructuring is currently transforming the ways in which people are thinking of training and learning systems. Companies are experimenting with centralization and decentralization, searching for the right mix of overall direction and local delivery of training. Training delivery is shifting from professional trainers to non-trainers such as managers, team leaders, and technical workers. Large companies are increasing their use of outside training providers for the design, delivery, and administration of training. Small companies are increasing their reliance on partnerships with other small companies, with community colleges, and with government organizations. Companies with large numbers of temporary or contract workers are facing the challenge of how to train, motivate, and communicate with an ad hoc workforce. More training is delivered in the context of a job or a task.

ASTD is investigating the radical transformations underway in the training field and assessing the implications of such efforts for training and learning systems in two projects: the Benchmarking of Training: Best Practices and Models in Training and Learning Systems, and the Volume, Distribution, and Impact of Employee Training.

The Benchmarking of Training. The ASTD Benchmarking Forum was established in 1991 to increase the effectiveness of training organizations in companies. The Forum was originally comprised of 19 firms; it has now grown to include 51 companies. Using the tools and techniques of benchmarking, the Forum seeks to identify and share best/successful practices of workplace training among member companies.

The Forum activities include establishing common metrics and operational definitions; gathering workplace training data from participating companies to develop a common, reliable, and shared database of information for members; and, demonstrating the benchmarking process to improve training in member companies and in the wider training community. This approach involves gathering and analyzing quantitative analyses of innovative and successful practices.

ASTD's Benchmarking Forum is responding to the dramatic changes in the training profession by expanding its focus to include such current developments as advanced delivery training methods and restructuring of training organizations. In addition to comparing training practices among member firms, the Forum is developing methods to better link training with performance, and to proactively monitor trends in the field.

The Volume, Impact, and Distribution of Training. Questions about the volume, distribution, and impact of employee training are among the most frequently asked by professionals, researchers, and policy makers in the HRD field. New data and analyses of worker training have become available over the past several years, and several new data collection efforts are currently underway.

With the objective of providing the best data on the scope, distribution, cost, and impact of worker training, ASTD is reviewing existing data, synthesizing results of new data collection efforts, and evaluating their effectiveness in light of the restructuring of training. The changes underway pose significant measurement challenges. Traditional measures of employee training, for example training days per student, are becoming less meaningful. Following these analyses, ASTD is planning to undertake a new data collection effort on employer-provided training.

Human Resource Development Research Center-- A Decade of Innovation

Richard A. Swanson
University of Minnesota

The University of Minnesota HRD Research Center conducts and disseminates scholarly inquiry on the practical problems of organization development and personnel training and development. Center funds come from business, industry, and government. Among the accomplishments, the Center has sponsored over seventy studies, has published and disseminated research findings, sponsored the ASTD Theory-to-Practice monograph series, and has served as the home of the Human Resource Development Quarterly. After a decade of work, the Center stills has an important role to play in the University of Minnesota graduate program and the profession.

The Human Resource Development (Human Resource Development) Research Center recently celebrated its tenth birthday. The Human Resource Development Research Center was know as the Training and Development Research Center (TDRC) most of its life. The Center works in harmony with the University of Minnesota graduate program and both changed their names in 1994 from T&D to Human Resource Development. What follows is a description of the Center followed by an analysis of the ecstasies and agonies of having a Center.

The Human Resource Development Research Center

Mission. The Human Resource Development Research Center engages in research and support for the improvement of organization development and personnel training & development in industry, business, and government.

The mission of the Human Resource Development Research Center is to promote, conduct, and disseminate inquiry about the practical and theoretical problems associated with developing and/or unleashing human expertise for the purpose of improving performance at the organization, process, and individual levels.

Program of Work. The Human Resource Development Research Center program of work includes:

1. Developing and validating sound Human Resource Development theories with special attention to economic, psychological, and systemic foundations.
2. Developing and validating effective (1) organization development and (2) personnel training and development tools and processes.
3. Researching the application of Human Resource Development theory and practice to the related fields of human resource management, career development, and quality improvement.
4. Encouraging and supporting the Human Resource Development research efforts of University of Minnesota faculty and students.
5. Encouraging and supporting the national and international community of scholars in Human Resource Development.

The Human Resource Development Research Center's program of work is accomplished through cooperative efforts with industry, business, and government in the forms of contracted research, internships, seminars, workshops, and consultations.

Expertise. The Human Resource Development Research Center is supported by a professional resource pool that has both breadth and depth. A mature 14 member Human Resource Development research faculty along with an energetic cadre of over 100 Human Resource Development graduate students serve the Human Resource Development Research Center and

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participate in the University's Human Resource Development academic program. Their areas of expertise are wide-ranging, including:

- Strategic planning
- Performance analysis
- Cost-benefit analysis
- Quality improvement
- Change process
- Team building
- Program evaluation
- Career development
- Computer applications
- Instructional technology
- Distance learning
- Workplace literacy
- International Human Resource Development

Dr. Richard A. Swanson serves as Director of the Center. He is also Professor of Human Resource Development at the University of Minnesota, 1954 Buford Avenue, St. Paul, MN 55101.

Research Contributions. The following is a selected list of outcomes resulting from Human Resource Development Research Center activities. A detailed list of Human Resource Development Research Center publications is available upon request.

- Sponsor of over 70 Human Resource Development research studies.
- Theory-to-Practice *Monograph Series* in partnership with ASTD.
- Editorial home of the *Human Resource Development Quarterly* in partnership with ASTD and Jossey-Bass Publishers.
- Theory-to-Practice internship program in partnership with business, industry, and government.

Ecstasies and Agonies of the Human Resource Development Research Center

This section opens and closes with the same conclusion-- having the University of Minnesota Human Resource Development Research Center has been worth the effort.

Ecstasies. The ecstasies of having a research center are powerful. They including keeping research out in front, giving credibility, providing a flexible mechanism for innovation, and the best possible platform for "win, win, and win" efforts.

Keeps research out in front. It is as simple as viewing the university's "teaching-service-research" triage as an triangle lying flat on the surface or as an upright triangle with research at the peak and teaching and services flowing out of the inquiry.

Gives credibility. The only universal in higher education is the respect that is ultimately paid to the generation of new knowledge and publishing the inquiry. Having a research center is a statement about the importance of the field and the seriousness of those connected to it.

Provides a flexible mechanism for innovation. Research seems to have an infrastructure that is less cumbersome and less prescriptive than the teaching and service domains of university activity. Furthermore, universities have numerous ways of (1) recognizing and managing centers and (2) numerous ways to receive and dispense funds.

Best possible platform for "win, win, and win" efforts. The opportunities for partnerships are numerous. The typical partners-- faculty, industry, and graduate students-- come to the table with complimentary agendas-- not conflicting agendas. And, without competition and the threat of exploitation, projects can fly!

Agonies. The agonies are powerful distracters. They include the agonies of dealing with weak partners, money, multi-everything, and loneliness.

Weak Partners. It happens all the time. You may really like the human resource development manager of the company you are talking to, while if his/her organization is not going to allow it to happen. Get out quick without burning any bridges and come back at a better time.

Another example is student researchers who don't deliver in terms of timeliness, quantity, or quality. Centers need a performance management that differs from instruction.

Money. It is no replacement for intelligence and passion. And, just when is enough money enough? I have yet to see a relationship between the size of the research budget and the quality of the research results. I believe there is a very high relationship between budget freedom and results. Otherwise, I'll take $15,000 with no strings attached to it over $65,000 of obligations.

Multi-everything. Everybody has an agenda and they will try to alter yours. Before you know it your center will be a multidisciplinary center of people who have minimal interest in the core issues of Human Resource Development or you will have a multicultural center of people who have agendas that do not come near the performance requirements of organizations. Saying this, both of these perspectives can be legitimate Human Resource Development Research Center research projects.

Loneliness. I believe research is an inherently lonely process. The required skepticism and concern for excellence drives a scholar inside. One of the best things a university-based center can do is break this loneliness-- to create a research community within an academic community. And, to foster an atmosphere of trust and regular opportunities for joy and celebration.

Conclusion

The University of Minnesota's Human Resource Development Research Center is in the process of evaluating, redefining, and re-energizing itself. The expectation is that the Center will be stronger as a result of this process. Whatever the outcome of this assessment, for those of us who have been with it since it's inception, having the Center has been more than worth the effort.

Supervisory Support as a Transfer Enhancing Activity: Synthesis of Four Research Projects

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Supervisory support is perceived as a major condition for enhancing transfer of training. However, research underpinning this conclusion is scarce. In this paper four case-studies are presented wherein the impact of supervisory support on trainees' transfer was investigated. Supervisory activities appear to exist in many variations, but effects are not clear. With one exception, the cases showed no direct effect existed between supervisory support and trainees' transfer.

During the last decade the importance of training effectiveness is frequently stressed as a corporate training issue (Wexley, 1984; Baldwin & Ford, 1988; Ford, 1990; Laker, 1990; Noe & Ford, 1992). In general, training is considered effective when trainees are able to apply knowledge, skills, and attitudes gained from training on the job. Often, this transfer from the training site to the job situation is regarded insufficient (Wexley, 1988). In their review Baldwin and Ford (1988) identified three categories of factors that may impact training effectiveness: trainee characteristics, training design, and work environment characteristics. In the latter category research focuses on factors that either inhibit or improve transfer of training (eg. opportunity to use, work groups, organizational climate). Several authors highlighted aspects of the supervisor' role in creating a work environment that enhance trainees' performance (Broad, 1982; Robinson & Robinson, 1989). However the number of empirical based studies is limited.

Becker and Klimoski (1989) investigated the relationship between the organizational feedback environment and employees' performance. They distinguished three sources of feedback: organization/supervisor, co-workers and self/task and two types of feedback: positive and negative. The results of their study revealed that feedback from the organization/supervisor is more highly related to performance than other sources. Further, the authors found that negative organization/supervisor feedback is related to lower performance and positive organization/supervisor feedback is related to higher performance. Nevertheless, Becker and Klimoski remained very cautious in their conclusions since their data did not exclude a reciprocal relation between feedback and performance. Although the authors stressed the importance of the supervisor's role this does not mean employees value their supervisors' feedback. Herold, Liden, and Leatherwood (1987) carried out research in two organizations and found that employees prefer self-feedback and task feedback above supervisory feedback.

Graham, Wedman, and Garvin-Kester (1993; 1994) focused on 'the manager as coach'. The authors defined eight coaching skills and they conducted a study to determine whether these skills can be learned in a program. Before and after the program the managers' employees were interviewed to rate the coaching skills of their managers. After the program for five of the eight coaching skills a positive change was observed by the managers' employees. These were: (1) communicating clear performance objectives; (2) providing regular performance feedback; (3) considering all relevant information when appraising performance; (4) observing performance with clients; and (5) recognizing and rewarding high performance. The most important conclusions drawn from their work is that coaching skills can be developed but that on-the-job application of the skills is not guaranteed (1993, p.12). Further, the impact of supervisors depends on the span of control. Managers who supervised

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eight or fewer account representatives obtained more benefit of the coaching skills program. Of course these specific coaching behaviors vary with organizational culture and employees' expectations.

Knowing that the supervisory support activities can be very diverse and effects are variable it is interesting to examine the content of supervisory support and it's effect in different organizational contexts. This paper summarizes the results of four studies focusing on the supervisor's role in enhancing transfer of training of employees. Two research questions are formulated: (a) What support activities are undertaken by the supervisor in order to improve transfer of training? and (b) How does supervisory support effect trainees' performance?

Methodology

Four recent case-studies have been selected. Criteria for selection of the research projects were whether in the project empirical data was collected with regard to supervisory support and performance of trainees before and after the training event. For the selected cases secondary analyses have been carried out. This consisted of close inspection of the used items, inspection of the Cronbach's alphas, eventually computing new variables, comparison of means of the groups (in cases of a design with a control and experimental group), and analysis of variance. First method and results of each case are described and discussed. Then the general results are discussed and the research questions are addressed.

Case 1

Method. Branderhorst (1994) carried out an experiment in an oil company. Thirty front-line employees of diverse departments were trained in the use of strategies to analyze and solve problems. The trainees of the experimental and the control condition were assigned equally to two training groups with different trainers. So every training group consisted of trainees of the experimental and control condition. In total the experimental condition consisted of fourteen trainees and in the control condition sixteen trainees were involved. In the experimental condition the following supervisory support activities were implemented:

- Before the training the trainees' supervisor received a short description of the training content and he discussed the forthcoming training with his employee.
- During the training the supervisor informed the colleagues of the trainee.
- After the training the supervisor spoke with the trainee about the application of the training content in the trainee's actual job situation.

Data were collected with three questionnaires for the trainees at the first day of the training (prior work behavior with regard to dealing with problems), at the last day of the training (intentions to transfer) and at seven weeks after the training (actual transfer and received supervisory support). The trainees' supervisors filled in a short questionnaire about their support. Further, with five trainees of both conditions interviews were carried out in order to collect some additional in-depth data.

Results. The first step of the secondary analysis consisted of the creation of variables other than used in the original study, the calculation of their Cronbach's alphas and their means for the entire group of trainees (see Table 1). Although the trainees were at random assigned to the conditions the scores at the variable 'prior work behavior' differed significantly. A Mann-Whitney Test showed that the control group had a significant higher score (M=17.00 versus M=10.25, two-tailed *p* .03). The variable 'prior work behavior' measured the use of strategies to deal with problems prior to the training. The items used to measure this variable were not comparable with the items used to measure the transfer intentions and the actual transfer. Therefore a comparison between the latter two variables and 'prior work behavior' is not carried out.

Identical items were used to measure transfer intentions and the actual transfer. The items were grouped into four variables that conceptualized the four topics of the training program. As found on test scores or the perception of support activities between the groups. From this can be concluded that no additional effect was caused by being in the experiment: eg. supervisors and trainees were not 'trying harder' when they were in the treatment group (Hawthorne effect). Consequently the results below are valid for the entire group of respondents.

Before and after the training the trainees' perception of the support and feedback activities of their supervisor were measured. Before the training only 29% of the supervisors discussed the objectives, content and expectancies, and only 25% made any arrangement with the trainee for this training on when and where (at home or in work hours) to study. During the training, the supervisor provided for an appropriate training environment for the trainee (57%), but is not involved in the trainee's questions, problems or the progress (60%). Furthermore, the supervisors did not know what the training was about (71%), did not comment the trainee's performance (68%), and the trainees stated that when they had questions, they preferred to consult colleagues. Altogether, it appears that the supportive activities of the trainees' supervisor are very superficial: related to the conditional aspects of the training and not related to the content.

Hence, the mean score for the supervisory support during and after the training is mediocre to slightly negative (3.03 and 2.51). Interesting is that the supervisors value their own behavior higher than their employees did (3.77 and 3.44). The same occurred with the feedback activities. In Table 3 the scores and measures for internal consistency (Cronbach's alpha) are summarized.

Table 3. Mean and reliability for two tests, support and feedback

Variables		Mean (%)		alpha	
Posttest		26.7 (89%)		-	
Transfer test		88.2 (73%)		-	
		during	after	during	after
Support[a]:	received	3.03	2.51	.80	.92
	provided	3.77	3.44	.69	.42
Feedback[a]:	received	2.97	2.86	.57	.88
	provided	-	3.45	-	.56

[a] Variables were measured with five point scales

When the differences between banks were analyzed, it appeared that perception of the supervisory support during training and after training varied significantly over the banks (F 3.32, df 23, *p* .0001; F 1.85, df 25, *p* .025). However, it was not evident in which direction the differences did occur, so nothing could be concluded on the effect of the bank's size or environment (rural vs urban).

The effects of the supervisors activities were very low: performance was not influenced positively or negatively by the (lack of) support. But support and feedback are related with job involvement (r .16, r -.17 respectively), and job involvement correlated positively with the transfer test and self-efficacy of performing relevant tasks. Based on this information, regression analysis was performed. Again no direct influence of support or feedback activities on performance were shown. However, job involvement was strongly effected by support (beta .22, *p* .02) and feedback (beta -.25, *p* .01). In turn job involvement effected self-efficacy (beta .42, *p* <.00005), and self-efficacy effected the trainee's performance as rated by the supervisor (beta .38, *p* .001).

It seems that when a supervisor shows interest, the trainee is likely to think: 'When my supervisor is concerned with this training, it probably is important or necessary'. Consequently the trainee's motivation to learn and motivation to transfer will be higher, and learns more from training. This causes a higher self-efficacy and job involvement, that can ultimately manifest in better performance.

weeks. But the supervisor can also wait and see if the employees report any problems or difficulties with their work. Another attitude is that the supervisor thinks it is not is job to know what happens on the workplace, but his assistance's. The proportion of the group that stated their supervisor executed that particular activity is presented in Table 5. Furthermore, the total group mechanics and the group of supervisors are compared with the Pearson's chi-square or the Fisher's Exact Test. The activities that are rated differently at a significance level $p < .05$ are indicated.

Due to the anonymity of the trainees for the transfer questionnaire it was not possible to calculate any effect of the supervisory activities on the trainees' performance.

Table 5. Support, and activities for three groups of mechanics and their supervisors

Variables	Mechanics				Super-visor (n=10)
	Group 1 (n=60)	Group 2 (n=20)	Group 3 (n=24)	Total (n=104)	
Support[a]	2.53	2.76	3.00	2.68	
Activities	(%)	(%)	(%)	(%)	(%)
-work site visit	24	24	52	20[b]	70
-performance appraisal	55	14	32	21	40
-corridor chat	51	11	37	34[b]	90
-asks whether problems occurred	63	5	32	18[b]	50
-discusses tasks on regular basis	35	19	46	25	30
-only reacts to occurring problems	62	17	21	50[b]	10
-responsibility assistant	55	25	20	42	20

[a]: 3 items on five-point scale

[b]: difference between two groups significant (p<.05)

General Results

In all cases the trainees can be described as front-line employees. In two cases interventions were scheduled to stimulate supervisors to show certain behavior that enhance trainees' performance (Branderhorst, 1994; Nauta, 1994). In the other two cases the regular procedures in the organization were followed and the degree of supportive activities was measured (Gielen, 1994; Leeninga, 1994).

Actual support activities. In Branderhorst's study the scheduled supervisory activities were threefold. Before training supervisors received a description of the training content and discussion with future trainees was planned. During training the supervisor had to inform the trainees' colleagues. After the training a discussion with the trainee was planned to discuss application of the learned skills. In the case of Nauta trainees developed an action plan during training and discussed this plan with their supervisor afterwards. Supervisors were informed by a letter of the Training Department to held a discussion about with the trainees. This letter provided guidelines for the content of the discussion. In the cases of Gielen and Leeninga no activities were scheduled. Activities were only undertaken by a minority of supervisors. In both studies the supervisory activities can be defined as rather superficial.

In all four cases the same pattern with regard to supervisory support is manifest. Trainees assess the support lower than their supervisors do. The question remains how to interpret these scores. Reflect those scores the actual support as perceived or as provided? Or are these scores an utterance of subjects' private interpretations?

Effects of support activities. The four studies present hardly any evidence for the idea that the supervisor is an important factor to enhance trainees' transfer. In Nauta's study no effect at all was observed. In the case of Branderhorst (1994) only for one of the four topics of the training program a relation occurred between the actual transfer and the support as perceived by the trainees. Due to the anonymity of the trainees it was not possible to calculate any relation between actual transfer and supervisory support in the research project of Leeninga (1994). In Gielen's project an indirect relation was found between transfer and supervisory support. It turned out that supervisory support and supervisor's feedback effected trainee's job involvement. Job involvement effected self-efficacy and this latter variable is related to trainee's performance as rated by the supervisor.

Although the amount of evidence for the supervisor as a important factor is limited, the projects of Nauta and Branderhorst show that it is possible to influence supervisors' support behaviors. Both projects provide evidence that interventions initiated by the training department result in actual adjusting of supervisors' behavior. For the case of transfer enhancement this can be explained as an important point.

Conclusion and Discussion

Although no convincing evidence was found that supervisory support directly contributes to trainees' performance, the conclusion that supervisory support does not matter at all is not our's. The arguments for our point of view are twofold. A first argument is already presented in the former section: when direct links are absent, indirect links could be existing. The second argument relates to the content and the presentation of the supervisory interventions. We suppose that more powerful programs of supervisory support, more powerful than applied in the research projects, are required to promote transfer. The success of those programs relies on the supervisors skills and knowledge what activities to undertake in what time schedule. Therefore training of supervisors and coaching by HRD professionals in exhibiting transfer enhancing behavior is a major condition for the appearance of transfer of trainees.

Consequently we suppose that more comprehensive transfer enhancing programs in the workplace are necessary. In both cases where treatments were carried out, the supervisory interventions were limited to one or two activities. A more optimal set of interventions derived from various transfer promoting factors is therefore required. Or in other terms: it is not only important to improve the supervisor's contribution to transfer but also to take into account all other factors to create an optimal setting. In order to obtain those settings a thorough overview of relevant workplace factors is needed and can be achieved with the use of a work environment assessment (Robinson & Robinson, 1985). Based on such assessment, decisions should be made concerning supervisory support, support of colleagues and the use of tools (like job aids) leading to more balanced and more powerful programs to enhance the transfer of training.

With regard to research on transfer of training the following points should be taken into account. First, the presented data show that job involvement and self-efficacy play an important role in explaining the effect of supervisory support. Therefore, these trainees' characteristics should be included in research designs. Secondly, the two projects where interventions were scheduled both consisted of small numbers of trainees. As a result of this, only non-parametric analyses were possible. Although research conditions are difficult to influence, new theoretical insights are only possible when larger numbers of subjects are involved in experiments. Larger numbers have the advantage that more advanced statistics can be computed and indirect links between support and transfer can be revealed.

Thirdly, the presented cases reveal supervisors and trainees assess similar variables differently. Therefore, it is worthwhile to collect data from both groups of participants.

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displayed in Table 1, the mean scores for transfer intentions (measured at the end of the program) were much higher than the scores of the variables that measured the actual transfer seven weeks after the training program. A comparison of the transfer intentions scores and the actual transfer scores revealed no significant differences between the two groups. A comparison of the actual transfer scores minus the scores for transfer intentions revealed no significant higher score for the experimental group.

Table 1. Characteristics of used variables

Variables[a]	Mean		alpha		#subjects		#items
Prior work behavior	3.24		.78		27		8
Transfer intentions (1) Actual transfer (2)	1	2	1	2	1	2	
-judgement situation	3.84	2.63	.65	.73	27	15	3
-decision making	3.95	2.66	.71	.93	27	15	5
-executing decision	3.56	2.47	.65	.90	27	15	4
-analyzing problem	3.86	2.72	.70	.83	27	15	3
Received supervisory support	2.21		.70		17		4
Provided supervisory support	2.65		.82		18		4

[a] all items were measured on five-point scales (1=low to 5=high)

The measurement of received supervisory support (trainees' scores) and of provided supervisory support (supervisors' scores) was carried out with identical items. These variables measure the support after the completion of the training program. As for the trainees' scores no significant difference was found between the experimental and the control group with regard to the supervisory support. However, the scores of the trainees' supervisors for their provided support showed that supervisors of the experimental group assessed their support higher (Mann-Whitney Test, mean rank 5.88 versus 12.40, two-tailed *p* .01).

Finally, Spearman correlations were computed to identify association between support and actual transfer. With exception of the relation between received supervisory support and decision making (R_s .69, *p* .01) no significant relations were found.

Case 2

Method. The setting for Nauta's study (1994) was a German bank where employees were involved in a training program 'Handling Complaining Clients'. The trainees that attended the program in March 1994 acted as the control condition (n=11), trainees that were involved in this program in April 1994 acted as the experimental condition (n=10). For the experimental group the following activities were scheduled:

- During training the trainees developed, with the assistance of the trainer, an action plan that addressed transfer intentions, barriers in the job situation and the transfer enhancement through supervisory support.
- At the same moment trainees' supervisors received a letter of the training department wherein was explained that their employees developed an action plan during the training program. Supervisors were asked to discuss this plan with their employees. A checklist with subjects for this discussion was enclosed, which corresponded with the subjects that the trainees outlined in their action plans.

Two questionnaires were used for data collection. Five weeks after the training trainees filled in a questionnaire with regard to their discussion with the supervisor about the action plan and other supervisory support activities. Trainees' supervisors received an questionnaire with identical items about the discussion and their other supervisory support activities. Items were rated on yes/no scales mostly. Further trainees received a list with items that measured their handling clients' complains behavior before and after the training program. Identical items were used to measure this behavior at both points of time. These behavior items were measured with six-point scales.

Results. The experimental and the control group differed in their scores for prior work behavior. A higher score was found for the control group. However, a Mann-Whitney Test showed the difference was not significant. A comparison of the post-scores of both groups did not revealed differences. This was also the case for the comparison of the post-scores minus the pre-scores.

Table 2. Characteristics of prior and post work behavior

Variables	Mean	alpha	#subjects	#items
Prior work behavior	3.44	.87	17	9
Post work behavior	4.83	.67	17	9

With regard to supervisory activities after the training program some differences existed when one takes into account the trainees' scores. In the experimental group the duration of the discussion was significant longer. The average length in the experimental group was 22.8 minutes versus 7.3 minutes in the control group (Mann-Whitney Test, *p* .016). As mentioned before items with regard to the content of the discussion were measures with yes/no scales so the Fisher's Exact Test was used to compare both groups. This test revealed that in the experimental group more often discussions were held between trainee and supervisor with regard to whether the trainee new learned skills met the standards for helping complaining clients and also discussed more frequent in the experimental group was the topic of the nature of the support necessary to apply learned skills on-the-job.

However, when one takes into account the scores of the supervisors for the above mentioned items one would expect the same paterna. Hence, no significant differences between experimental and control group were found. Supervisors apparently assess the content of these discussions otherwise than their employees. Further, other differences between supervisors of the experimental and the control group existed with regard to the content of the discussion about the action plan. Supervisors that came from the experimental group more often discussed with their employees the barriers to apply learned skills and possible solutions (Fischer's Exact Test, one-tailed *p* .035) and they discussed more often the materials trainees used in the training program (Fischer's Exact Test, one-tailed *p* .01).

Case 3

Method. The purpose of the study of Gielen (1994) was to examine which factors can influence learning and performance before, during, and after the training program. The study was carried out in a large Dutch banking organization, where desk clerks were involved in a CAI on the legal aspects of their jobs. In a period of at least 3 months four measurements are completed, in which not only learning and performance were assessed, but also information on individual trainees' influencing factors (motivation to learn, job involvement, self-efficacy, perception of relevance) and work environment (support, feedback, opportunity to perform) was collected. The 'treatment' group (n=72) received all four measurements and the supervisor was asked to assess the performance of the trainees'; the comparison group (n=29) received only the second and fourth measurement. Data was gathered by means of tests (pretest, posttest, and transfer test) and questionnaires (four for the trainee and one for the supervisor).

Results. First the two groups were compared: it appeared that no significant differences were

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Case 4

Method. Leeninga (1994) examined the effects of a training for approximately 400 mechanics in a public service corporation (energy). These mechanics worked in three different departments (eg. electricity, gas). The training consisted of two parts: part A was similar for all mechanics, part B was specific for each department (so three versions of part B occurred). The effects were measured on three levels: reaction, learning and behavior in a pre-post-post single group design. Furthermore information was gathered on variables like opportunity to perform, supervisory support, perception of relevance, and self-efficacy. For the data collection tests and questionnaires for the trainees, and a questionnaire for the supervisors were used. The supervisory support activities were evaluated in the transfer questionnaire. This transfer measurement took place seven weeks after the first posttest.

Results. The post test (maximum score of 100 points) revealed a learning effect for each group on aspects of part A and B. For part A the results of the transfer test showed that the degree of learning decrease, but not significantly. For part B the results showed that for group 2 and 3 a significant decrease ($p < .05$) was demonstrated on the transfer test; group 1 showed a slight increase on the transfer test, however, not significant. A influencing factor could maybe found in the degree the employees had the opportunity to perform in their work the tasks that were learned during training.

This opportunity to perform was measured separately for part A and B. For part A six tasks were identified, which were related to the training content. For each task the trainees were asked whether this tasks could be performed in the real work situation, and if not, why they were not able to perform. For the 11 relevant tasks in part B the same procedure is followed. The proportion of the mechanics that stated they could actually perform these tasks varied extensively. In Table 4 the minimum and maximum proportion for each group and for the total group for both parts are presented. This degree to which the trainees have had the opportunity to perform the tasks in their work situation can be an explaining factor for the loss of knowledge, which was measured with the posttest and the transfertest. In fact, the most important reason for not performing was, that these tasks did not occur in the work situation.

Table 4. Test results, and opportunity to perform for three groups of mechanics

	Group 1		Group 2		Group 3		Total
Posttest (1) Transfertest (2)	1	2	1	2	1	2	
Part A	59	58	61	56	66	55	
Part B	61.4	63*	57.6	43	61.6	36*	
Opportunity to perform							
Part A	19-61%		15-73%		59-91%		27-70%
Part B	59-81%		70-91%		64-77%		69-79%

*: difference between two tests significant on T-test ($p < .05$)

Consequently the supportive activities of the supervisor were examined. From the transfer questionnaire a 3-item scale for supervisory support was constructed. The internal consistency was measured and is acceptable (Cronbach's alpha .65, n=102). For the supervisors a similar support variable could not be constructed, because of the low response (n=10). The rated support scores were relatively low, with values between 2.5 and 3.0 (1= totally disagree, 5=totally agree). There was found a significant difference between group 1 and group 3 with regard to supervisory support (t 2.24, df 82, p .03). It appeared that mechanics from group 3 perceived that they received more support than their colleagues in group 1 (see Table 5 for exact values).

The trainees is asked what activities their supervisor has undertaken. These activities consisted of active and more passive (reactive) activities. For example, the supervisor could visit the work site, execute performance appraisals, or ask whether problems did occur during work in the past

Transfer of Training: The Impact of Supervisory Support, Supervisory Involvement, Situational Constraints, and Self-Efficacy on the Application of Technical Skills Training

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Contemporary researchers have noted the need to delineate factors that promote long term transfer of training. Consequently, this study examined (a) supervisory support, supervisory involvement, situational constraints, and self-efficacy as factors that may expand the understanding of long term transfer of training. Although these factors did not significantly impact transfer of training at the Connecticut Department of Labor, several other organizational constraints, work group constraints, and individual constraints emerged as barriers to transfer.

Pressed by global competition, changing customer demands, and the rising costs of doing business, many companies are examining training expenditures to determine the actual return on their training investments (Carnevale, Gainer, & Villet, 1990; Georgenson, 1982; Gist, Bavetta, & Stevens, 1990). In fact, organizations in which training was traditionally defined as "the cost of doing business" or "an employee benefit with little bottom-line impact" have begun to redefine training as "an investment to improve productivity" (Broad & Newstrom, 1992). These organizations recognize that training should be linked to competitive business objectives and corresponding business strategies (Peery & Salem, 1993; Schuler & Jackson, 1987). In this context, Human Resource Development (HRD) departments enjoy increased visibility and are subjected to increased accountability.

The degree to which employees utilize the knowledge, skills, and behaviors learned during classroom training to improve job performance (i.e., transfer of training), however, is difficult to assess (Baldwin & Ford, 1988; Goldstein, 1986). Transfer of training research (Baldwin & Ford, 1988; Laker, 1990) to date has generally assessed only short-term transfer (e.g., self-report of the intention to use training content on the job). While studies have identified how much an individual knows upon completion of a training program, they have not identified how much of the new knowledge, skill, or behavior has been incorporated into daily work habits. In fact, few corporations understand how to utilize training to develop a highly skilled workforce (Sheckley, Lamdin, & Keeton, 1993) although continuous improvement of job skills is necessary to support high performance enterprises.

Corporations failing to explicate the connection between classroom learning and workplace application can anticipate productivity problems as they expand the responsibilities of individuals. In participative organizational climates, employees are increasingly expected to utilize knowledge, skills, and behaviors learned in the classroom to solve day-to-day work problems. This expectation implies an ability to apply knowledge, skills, and behavior to many contexts (Laker, 1990). Consequently, the gap between skills learned in the classroom and skills applied to improve job performance will widen without modification of current training practice. Organizations seeking to promote superior performance face a common problem: How to strengthen the transfer of classroom skills to the workplace.

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Transfer of Training

Transfer of training researchers (Baldwin & Ford, 1988; Laker, 1990; Porter & Lawler, 1990) have identified three factors that significantly enhance the probability of training transfer. These interdependent factors are: instructional content that provides the skills and knowledge to do a job, motivation to use the skills and knowledge learned in the classroom, and a work environment that supports the use of the newly acquired skills and knowledge. To illustrate the relationship among these three variables Huczynski and Lewis (1980) developed a transfer of training model to illustrate the interaction of course content, individual motivation, and the work environment. Their model identifies three distinct training phases: the pre-course phase characterized by the identification of the training need and the initiation of the motivation to engage in the learning process, the learning phase characterized by the delivery of materials to give participants skills so they can be more productive on the job, and the post-course phase characterized by the management of the work environment to promote transfer of knowledge, skills, and abilities learned in the classroom to work settings. To incorporate training strategies for the three phases of training, other researchers (Broad & Newstrom, 1992; Goff, Hastings, & Sheckley, 1992) suggest that organizations form transfer partnerships that include three key stakeholders: the trainee, the trainer, and the manager. Together, these partners work to support the long term workplace application of knowledge, skills, and abilities learned in the classroom.

In this training paradigm, on-the-job application of training is the major determinant of successful training. Training outcomes are measured with concrete examples of the integration of training concepts in daily work activities over time (Brinkerhoff & Gill, 1992; Silberman, 1990). The supervisor is the primary transfer agent following the formal classroom training. As the manager of the work environment the supervisor provides the structures, values, and systems that support transfer of training.

Supervisory Support. Because the supervisor's role is a critical component of skill transfer, a delineation of supervisory behaviors that are most instrumental in providing a work climate that encourages transfer of training is necessary for a thorough discussion of the transfer of training problem. As organizational leaders, supervisors tap needs, raise aspirations, shape values, and mobilize the potential of their employees (Burns, 1979). Specifically, researchers (Huczynski & Lewis, 1980; Jacobson, 1986) determined that effective supervisors provide situational supports (e.g., job autonomy, time to practice new skills) to meet learners' specific emotional, cognitive, and material needs. They create a climate conducive to transfer by: (a) articulating how the application of the new skills or knowledge relate to personal and organizational goals (Georgenson, 1982; Huczynski & Lewis, 1980; Senge, 1990); (b) aligning the workplace to the learning goals of the training program (Broad & Newstrom, 1992; Little, 1982; Quick, 1991); (c) giving training participants the time needed to practice the learned skills on the job without imposing normal deadlines during the post-course training phase (Huczynski & Lewis, 1980); and (d) modeling the desired skills (Bandura, 1986, 1989; House, 1968).

Situational Constraints. Effective supervisors also reduce the situational constraints or workplace barriers that limit the long term transfer of training. Researchers (Jacobson, 1986; Peters & O'Connor, 1980; Trost, 1985) suggest that the work environment is especially significant to transfer of training because many learners report more organizational barriers than organizational supports for learning new skills. In fact, Broad and Newstrom's (1992) review of the research literature determined that supervisors are the most significant contributors to a successful training program because they can reduce the three most significant barriers to transfer: (a) the lack of reinforcement on the job, (b) interference from the immediate work environment, and (c) a non-supportive organizational work climate.

Supervisory Involvement. In addition to supervisory support and situational constraints, theorists (Georgenson, 1982; House, 1968; Huczynski & Lewis, 1980; West, 1990) also promote supervisory involvement in the training process as critical to the long term success of training transfer. They contend that supervisors familiar with the training process are best equipped to: (a) assist trainees with the development of action plans that provide opportunities to use the training material in the workplace during the learning phase of training (Broad & Newstrom, 1992); (b) make critical linkages between the training curriculum and the job application of skills during the learning phase of the training (Broad & Newstrom, 1992); and (c) provide informed feedback and advice during the training session (Marson & Bruff, 1992; Robinson, 1989).

Self-Efficacy. Supervisory success in managing the training process is mediated by the self-efficacy of the training participants. Self-efficacy, or an individual's judgment of "how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122), includes an estimate of ability, adaptability, creativity, and capacity to perform in a given situational context. Since self-efficacy is also related to performance (Frayne & Latham, 1987; Locke, Frederick, Lee & Bobko, 1984), the impact of supervisory support, supervisory involvement, and situational constraints in any given context is mediated by the interaction of these variables and the trainee's self-efficacy.

Methods and Procedures

This study was conducted at a large state agency in Connecticut utilizing a sample of 85 interviewers who conduct unemployment insurance claim interviews and job service interviews. The study was designed to examine (a) supervisory support, (b) situational constraints, (c) supervisory involvement in the training process, and (d) self-efficacy as factors that may expand the understanding of transfer of training. Specifically, data were gathered to determine: (a) the impact of supervisors' involvement in training on participants' test scores immediately following the training and two months later; and (b) the relative contribution of supervisory support, situational constraints, and self-efficacy on participants' test scores immediately following the training and two months later. All participants completed: a new claim interview, a job service registration, a questionnaire immediately following the training, and a questionnaire two months after the training.

Results

For the first two hypotheses of this study, speed and accuracy scores of the participants with training supervisors were compared to the speed and accuracy scores of the participants with non-training supervisors using ANOVA analyses. The results suggested that supervisory involvement impacted some test scores immediately following the training as well as some test scores two months later. In particular, supervisory involvement had a statistically significant impact on participants' error rates for Job Service posttest 1 ($F_{1, 83} = 4.2$ $p < .05$), participants' speed scores for Job Service posttest 1 ($F_{1, 83} = 6.3$ $p < .01$) and participants' speed scores for the Unemployment Insurance posttest 2 ($F_{1, 82} = 3.9$ $p < .05$).

Follow-up analyses were conducted to determine the existence of statistically significant relationships that might have modified the interpretation of these findings. The results of these follow-up analyses suggest that age as an alternate independent variable is positively correlated with Job Service posttest 1 error scores ($r = 0.25$, $p < .05$) as well as Unemployment Insurance posttest 2 speed scores ($r = 0.42$, $p < .05$). The significance of the differences between the group with training supervisors and the group with non-training supervisors disappeared for Job Service errors on posttest 1 and for Unemployment Insurance speed posttest 2 when the effects of age were included as a covariate in the analysis. Group differences for Job Service speed scores on posttest 1, however, remained significant with the effects of age covaried.

Two regression analyses examined the impact of supervisory support, situational constraints, and self-efficacy on test scores for hypothesis 3 and hypothesis 4. Surprisingly, the combination of these three independent variables did not predict scores for either of the posttests. In fact, supervisory support, situational constraints, and self-efficacy combined to account for only a maximum of 13% of the variance in error scores and a maximum of 8% of the variance in speed scores.

Follow-up analyses to identify other variables that might combine with supervisory support, situational constraints, and self-efficacy to predict performance variance were conducted as well. Again, age emerged as an important variable. Specifically, the follow-up regression analysis for Job Service posttest 2 errors ($F_{overall} = 5.9$, $p< .01$) accounted for a total of 43% of the variance with age ($t + 3.8$, $p< .01$) and supervisory support ($t = -2.3$, $p < .05$) identified as significant variables. In addition, 22% of the variance for Unemployment Insurance posttest 2 speed ($F_{overall} = 3.56$, $p< .o1$) was accounted for with the inclusion of age ($t = 3.2$, $p < .01$) as the only significant variable in the subsequent regression analysis. Overall, these results suggest that age is related to the errors made on Job Service posttest 2 and the speed for Unemployment Insurance posttest 2. The results also suggest that the original supervisory support variable becomes significant for Job Service posttest 2 errors when the effects of age are removed.

Overall, the results of the ANOVA procedures and the results of the regression analyses determined that the independent variables did not significantly impact performance as predicted. In fact, supervisory involvement was the only independent variable to significantly impact performance when age was included as a covariate. An understanding of the implications of these findings is necessary to refine long term transfer of training strategies for HRD professionals.

Discussion

Although a wide range of error scores and speed scores were expected in participants' performance on the Job Service and Unemployment Insurance posttests, the range of scores was limited and all participants unexpectedly passed the pre-determined performance standards for error scores and speed scores. The limited variability in scores may have contributed to the lack of significant results. In addition, the correlation defining the relationship between supervisory support and situational constraints ($r = 0.7$) was greater than anticipated. The relationship between these two variables suggests that supervisory support and situational constraints explained much of the same variance.

The analysis of the data identified several other factors that may have impacted the transfer of training. In particular, the organization's culture, the work group's norms, and the individual's attitude and behavior combined to mediate transfer of training efforts. Classroom and workplace distinctions emerged in these overriding themes.

Classroom Factors. Although little research has been conducted to test the impact of supervisory involvement on workplace performance, transfer of training literature suggests that individuals reporting to supervisors involved in the training will perform better than individuals reporting to supervisors not involved in the training because training supervisors: (1) are credible trainers due to technical expertise (Coffman, 1979, 1980; Quick, 1991), (2) will foster workplace application of the training during the training session (Georgenson, 1982; House, 1968; Huczynski & Lewis, 1980; West, 1990), and (3) will support the training with related activities in the pre-training and the post-training work environments (Broad & Newstrom, 1992; Taylor, 1992). The results of this study, however, suggest that the impact of the supervisory involvement variable is mediated by five factors not previously discussed in the transfer of training literature. First, the analysis of the results suggests that supervisors as trainers will be most credible if their technical skills are augmented by the presentation skills, the facilitation skills, and the communication skills required by trainers. Second, the self-efficacy determinations of training supervisors might influence the trainer's delivery of the course material. Instructors with high instruction self-efficacy will be more apt to design classroom learning to provide all participants with the help they need to succeed than instructors with low instruction self-efficacy (Bandura, 1993). Third, supervisors as trainers may inhibit full participation of their direct reports in the classroom training more than they inhibit the participation of other employees due to employees' concerns for favorable assessments (Taylor, 1992). Fourth, encouraging voluntary attendance in training programs might alleviate some of the negativity expressed by participants while increasing goal commitment. Finally, goal commitment of the participants may be influenced by the perceived goal commitment of the training supervisors (Eisenberger, Huntington, Hutchinson, & Sowa, 1986). Since this research indicates that the specific influence of the teacher in transfer is minimal, factors related to the workplace itself might provide a more accurate explanation for the findings of this study.

Workplace Factors. This study expected the combination of supervisory support, situational constraints, and self-efficacy to explain a significant amount of the variance associated with Job Service and Unemployment Insurance error scores and speed scores. Instead, the variables combined to explain an average of 6% of the error scores and an average of 4% of the speed scores. Additionally, participants' mean scores indicated that supervisory support (e.g., providing time to practice new skills), the reduction of situational constraints (e.g., the lack of on-the-job reinforcement for skill usage), and participants' self-efficacy were only "moderately helpful" transfer strategies. These findings suggest that other workplace factors may have influenced the results.

Organizational Commitment. The first environmental constraint participants mentioned as an impediment to their transfer efforts was the lack of organizational commitment to the training process. This criticism indicates that sponsorship of the training by senior management was a crucial, missing link that might have hampered the transfer efforts of the training participants as well as the initiation of support behaviors by their supervisors. Participants reported that the failure of senior managers to explicitly communicate the responsibility, the authority, and the activity of all employees negatively impacted the transfer of this training which suggests that support for training needs to be consistent, visible, and articulated by all levels of management. In fact, this study contradicted previous research which suggested that the immediate supervisor could mediate the effects of a non-supportive work environment (Bennis & Nanus, 1985; Bradford & Cohen, 1984).

Work Group Factors. The second environmental constraint factor participants identified as an transfer impediment was the work group's reaction to the training. Participants believed that this training, designed to teach participants new job responsibilities, would significantly disrupt the operating procedures of their current work groups. Unsettled by these anticipated changes, participants retaliated as reluctant classroom learners. Participants' resistance persisted when they returned to work. The work group's beliefs about the organization (Reiss, 1980), the work group's beliefs about group members' social roles (Stryker & Statham, 1985), and the group members' beliefs about themselves (Swann, 1984) combined to dictate the level of acceptance for the training. Threatened, the work groups attempted to block the job changes by collectively resisting the training. These outcomes denote a powerful reciprocal relationship between work group and supervisor. In fact, the amount of transfer may vary according to the amount of work group resistance encountered by the immediate supervisor.

Individual Differences. Data from statistical analyses as well as personal statements from participants and their supervisors suggest that this study did not adequately explore the dimension of individual differences. Self-efficacy, operationally defined as the confidence in one's ability to complete Job Service and Unemployment tasks, did not explain performance differences. Instead, participants' performance anxiety and participants' chronological age emerged as the two salient individual differences.

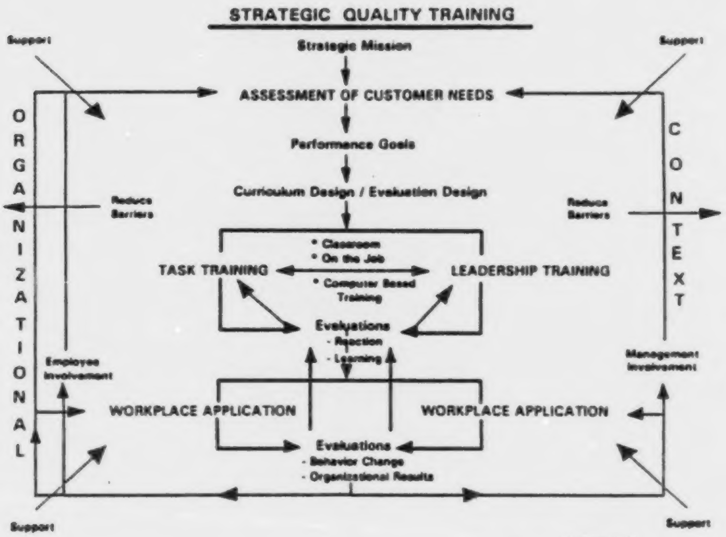
Performance anxiety was often mentioned as a significant barrier to skill development for participants in this study. In general, individual differences in performance anxiety may be attributed in part to the social comparisons individuals use to determine their commitment to the training process (Wills, 1991). Individuals reporting low levels of stress may have employed upward comparisons to foster performance improvement. In contrast, individuals reporting high levels of stress may have employed lateral comparisons and downward comparisons to maintain current performance levels. Participants' social comparisons most likely shape subsequent determinations to engage in behavior change. Individuals with high levels of anxiety would be most likely to reduce their anxiety with downward comparisons while individuals with low levels of anxiety would more readily engage in training transfer. Based on these findings, an understanding of the anxiety levels and the nature of social comparisons may be crucial to the initiation and maintenance of participants' transfer efforts.

Finally, age emerged as a statistically significant independent variable in the ANOVA results as well as the regression results. Specifically, this study determined that age is strongly related to job performance. Younger participants completed the performance tests in less time than the older participants. Younger participants also recorded fewer errors than the older participants supporting previous research that suggests that (a) psychomotor functions decrease with age (Elias, Elias, & Robbins, 1987; Giniger, Dispenzieri, & Eisenberg, 1983; Gist, Rosen, & Schwoerer, 1988) and (b) short term memory and learning ability decrease with age (Elias, Elias, & Robbins, 1987; Sterns & Doverspike, 1989). Results of this study further suggest that tests to measure fluid intelligence (Cattel, 1991), inattention to learning style differences (Ford, 1994), motivational strategies that appeal to only one segment of the population (Fossum, Paradise, & Robbins, 1989; Noe, 1986), computer phobia (Davis, 1989; Igbaria, Pavri, & Huff, 1989), and supervisory expectations (Siegel, 1993) may contribute to age distinctions which impede the long term transfer of training. These possible age distinctions if empirically validated have tremendous implications for the graying American workforce. In fact, 17 million of the workers in the labor force will be 55 by the year 2000. Failure to address age differences could result in severe economic losses as well as complaints of age discrimination. Strategies that draw on the accumulated knowledge of older workers should be designed to ensure the engagement of all workers in a continuous learning environment.

Strategic Quality Training Model

Based on the results of this study a Strategic Quality Training model (Hastings, 1994) (Figure 1) has been designed to integrate the principles of transfer of training research with the core principles of the total quality movement (TQM) (i.e., customer service, leadership, skill development, and measurement) to support the continuous improvement of core business activities. To minimize the impact of organizational constraints (e.g., differences in managers' behaviors, differences in managers' goals), work group constraints (e.g., differences in commitment of work groups, differences in goals of work groups), and individual constraints (e.g., age, anxiety) the proposed transfer of training model involves all levels of the organization in the three phases of training. Lastly, the model supports the reliance on HRD staff to facilitate the training process to promote a comprehensive training process.

The Strategic Quality Training model utilizes a six step process. First, a needs assessment is conducted to assess training needs related to the organization's mission. The gap between present skill level and the required skill level are identified and training objectives and corresponding performance goals are established. Next training is designed to establish a formal link between training activities and the work environment. Specifically, two kinds of training curriculum are designed. The first kind of training, *task training*, is designed to build specific skills (e.g., customer service skills) that are needed by employees. The second kind of training, *leadership training*, (e.g., coaching and mentoring training) is designed to build specific support


STRATEGIC QUALITY TRAINING
Support
Strategic Mission
Support
ASSESSMENT OF CUSTOMER NEEDS
ORGANIZATIONAL
CONTEXT
Performance Goals
Curriculum Design / Evaluation Design
Reduce Barriers
Reduce Barriers
• Classroom
• On the Job
TASK TRAINING
LEADERSHIP TRAINING
• Computer Based Training
Evaluations
- Reaction
- Learning
Employee Involvement
Management Involvement
WORKPLACE APPLICATION
WORKPLACE APPLICATION
Evaluations
- Behavior Change
- Organizational Results
Support
Support

(Hastings 1994)

skills needed by supervisors and managers who are responsible for promoting the long term application of the training. Corresponding evaluations are also designed to measure reactions to the training, the learning, the behavior change, and the organizational results that occur because of the training intervention.

The next step in the model is the delivery of the training (on-the-job training as well as classroom training) and the administration of evaluations to determine participants' reactions to the training and participants' learning. These evaluations are used to determine the short term transfer of training. Fourth, the application of the training (the most significant part of the training process) takes place in the work environment. Task training learners practice using their new skills while their supervisors practice using new leadership skills. After training participants have had time to assimilate the new skills (a minimum of three months), evaluations to measure long term transfer (behavior change and organizational results) are administered. Based on the results of these evaluations, modification of the training design and new training goals are defined. In the final step continuous improvement is supported with a re-examination of the needs assessment process.

In summary, the utilization of this Strategic Quality Training model facilitates learning for all members of an organization while promoting the continuous transformation of the organization itself. Specifically, effective implementation of this model involves key stakeholders (the trainee, the trainee's supervisor, and the trainer) in the design of work-related training to build commitment to the training process. Supervisors and senior managers are also trained to provide appropriate support for each training initiative. In addition, evaluation of the training process is required to document short term transfer, long term transfer, and organizational improvements. Overall, the utilization of this training model promotes skill initiation and skill maintenance behaviors by: (a) integrating training and the organization's strategic mission and goals, (b) building partnerships with management and line staff, (c) measuring and documenting training effectiveness, and (d) promoting strategies to incorporate training into work practice.

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Factors in the Organizational Climate that Motivate the Trainee to Transfer Behavior Learned in a Training Setting to the Actual Work Environment.

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The relationship between transfer behavior motivation and the organizational climate is examined in this paper. Several motivational factors were examined and mapped to an individual's need in the work environment. The ideal organizational climate will recognize these employee needs and provide individuals with the tools and support required for maximization of skills transfer, resulting in a greater rate of return on investment dollars used for training..

Every activity is critical to maximizing the return on investment for training. This means to be effective, learning must generalize into targeted areas of the company (Ulrich, Jick, & Von Glinow, 1993). This paper will look at the factors surrounding training design that motivate learners to apply new abilities or behaviors in the work place.

Motivation to learn content and then apply it to the job task is critical to training impact. Without motivation to learn, the most sophisticated training program cannot be effective (Clark, Dobbins, & Ladd, 1993). Identifying factors that foster such motivation enhances the transfer of learning that is important to the organization interested in growth, investment in resources, and revitalizing, maintaining, or enhancing creativity in the work place.

Training is efficient when it makes workers more effective in less time or with less money. This can be enhanced when the training is clearly identified with the organization's goals and with individuals tasks which are intended to achieve these goals. Adult educators and participants must be clear as to which behaviors are expected to change and why. Barriers or inhibitors to effective transfer of learning must be determined before the training program begins (Ford, 1994).

Who and Why

There are people beyond the participant who will be 'paying a price' to have trainees attend a learning experience (Swanson & Nijhof, 1994). It is essential to discover how behaviors that these people anticipate occurring from the training will match the organizational's need for these skills. These stakeholders have the greatest interest in providing a motivation enhancing climate that will allow for the maximization of transfer of learning.

Without motivation to transfer learning to task environments, the most sophisticated training program cannot be effective (Clark, Dobbins, & Ladd, 1993). The ability to see the 'big picture' enables the learner to see how their training experience fits into the overall scheme of events within the total transfer environment (Kiener, 1994).

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Many studies have analyzed what contributes to the employee motivation to transfer the learned behaviors to the work environment. These contributing factors include the instructional approach used in training, the personal investment, self-efficacy, and the organization climate. The organization climate includes support from the work place, policies, tools provided on the job, and the use of mentorship.

Instructional Approaches

Among the instructional approaches to education that were reviewed, the experiential approach was documented as the most effective (Fleming, 1992). The experiential instructional approach emphasizes active learning in simulated or actual work situations. Although it holds the greatest potential for promoting generalized skill development, refinements are needed. Ensuring that the experience is truly transferable to the work environment requires thorough evaluation. Is psychological realism ensured through ongoing field experience? For example, the content and pace of instruction need to be sufficiently flexible to accommodate individual needs, practice, analysis, and self critique in the safety of the classroom. Providing quality trainers and support are related investments that the organization must be willing to make.

Organized learner content strategies is another way to facilitate transfer (Nolan, 1994). In this model, trainees perform individual or small group research. They meet, express, and listen to other view points. The dialogue allows them to broaden their prospectus on issues and solidify their learning. Discussions that address the successes and failures of others allows them to learn how to problem solve in multiple situations.

Personal Investment

Expectancy theory suggests that trainees are unlikely to be motivated to learn unless they believe that training will result in either improved job performance or career advancement (Clark, Dobbins, & Ladd, 1993). Training motivation stems from the belief that training will result in job utility (higher job performance) or career utility (promotion opportunities). If the employee sees no benefit for personal growth, motivation will not be high.

A related influential variable in transfer motivation is the learner's involvement in the decision to participate in training. Voluntary rather than required participation in training is associated with stronger beliefs that the learning is appropriate, evokes commitment to the training experience, and increases satisfaction with training. Subjects who were able to attend training that they had requested reported higher motivation to learn than did subjects who were not assigned to training that they had selected (Clark, Dobbins, & Ladd, 1993). This need for self-initiated education is frequently facilitated by developing a Individual Education Plan (IEP) with each employee. This enhances employee confidence that they play an active role in developing their educational experience in the organization.

The credibility of the individual that recommends training, along with the supervisor's and group's support for training validates the experience and encourages transfer of learning. If the person recommending training is well respected and exhibits behaviors grounded in the training, learners are more highly motivated and committed to complete the training and use it in the work environment.

Self-efficacy

An individual's ability is often related to the amount learned in training. Self-efficacy has an impact on the employee's motivation to transfer behavior. It is fundamental to success in applying learning to work. Individuals with high self-efficacy are more likely to be active in applying trained tasks and attempting more difficult and complex tasks on the job (Ford. Quinones. Sego. & Sorra. 1992).

The most valuable reward comes to participants when they see themselves doing something useful that they were unable to do before. Suggestion or verbal persuasion is widely used in increasing perceptions of self-efficacy because it is easy, inexpensive and readily available. Participants expect success when they are in comfortable, relaxed environments, free from stress and annoyance (Carroll. 1993). It is these expectations that will become realized processes.

Organizational Climate

Richey (1990) researched organizational climate factors that influenced the degree to which employees were motivated to apply learned behaviors in the work environment. The factors that motivate employees to use new skills and behaviors on the job are support from the work place, policies, tools provided on the job, and the availability of a mentor.

A positive organizational climate exists where each employee feels that they are contributing and influencing the success of the company. New behavior must come into contact with positive consequences in the transfer setting, as well as the reinforcement of generalizing new skills to other areas of business. An organization built on the assumption and values of self-actualization of its individuals will have a climate conducive to maintaining the motivation of the learner.

Support

Trainees should encounter little difficulty in applying what they have learned. The work environment needs to provide physical or human resources, support from colleagues for new ways of performing work roles, and norms or values within the system of application of training (Fox. 1994). The organization is responsible to support the efforts and expenses of the training endeavor. Trainees believing that they are supported from peers or supervisors in using their new skills will be motivated to learn during training. Recognition that training is beneficial because of the ability to transfer skills to the job is imperative. A supportive, open climate facilitates in communication (Rainey. 1983), allowing the trainee to fit easily into the organization.

The management style and climate set by a trainee's supervisor can hinder transfer of training. Managers create a work environment that fosters individual motivation. Sharing vision and values allows motivation to thrive and communicates to the trainee trust and belonging. Endorsing continuing education relays the important role that education plays in the organization. Remaining current with tools and training is essential in keeping the environment vitalized (Ranade & Clark. 1992) and the employee valued.

Supervisors need to be certain that they do not resist change or block innovation that comes from training programs (Clark. Dobbins. & Ladd. 1993) by allowing experimentation with new ideas and skills. Soliciting input on program content and design from supervisors includes them in the training process both physically and emotionally. Familiarizing supervisors with the program requirements in conjuncture with the benefits and expected outcomes, and enlisting their assistance in collecting evaluation data from the program can enhance their commitment to the shared success of the transfer of learning (Willard. 1992).

When people work in a positive atmosphere and have harmonious relationships with each other, motivation seems to take care of itself (Lau. 1992). Having co-workers and trainees meet before and after training establishes relationships and allows the trainee a sense of belonging to the group and organization. Involving the co-workers in the training process by familiarizing co-workers with outcomes and benefits of the program cements both the learning experience and the relationship with the trainee.

Policies

Modifying organizational systems to support newly learned behaviors plays a key role in the transfer of learning process. Training outcomes need to be aligned with the values and culture of the organization (Willard, 1992). Eliminating policies or procedures which discourage performance of training behaviors is essential. Implementing a reward or incentive policy encourages application of the behavior.

Managerial responsibilities include setting the long-term commitment to implementation, recognizing that employees will learn the technology at different rates, accepting that mistakes will be made, and remaining actively involved in the training process (O'Connell, 1990). Management must take an active role in the education of their resources to set the tone and bring together corporate wide policies regarding effective training resulting in high transference of behavior.

Tools

Instructional materials designed well encourage transfer. Required equipment or materials need to be available to the trainee. Job aids incorporated into the design of the work environment supplement and reinforce training. Trainees also benefit from having a quick reference guide. Activities started in the training environment can be completed on the job, allowing immediate application of the skill.

Mentorship

Employing a mentor to provide guidance, reinforcement, and feedback to the trainee reinforces learned behaviors. Getting the learning experience close to the actual physical workplace fosters the application of skills and increases the transfer of training (Stuart, 1992). This ensures that the trainee is performing the tasks correctly and efficiently, and gives the learner a supportive environment in which to perform.

Tutors help students apply newly acquired learning in order to facilitate training effectiveness. Tutors must think in terms of organizational outcomes, help trainees acquire training transfer agent skills, evaluate the outcomes of intervention strategies, and acquire an extend repertoire of professional training techniques (Huczynski, 1989). All these skills will lend credibility and respect to the tutor, creating an opportunity for growth of motivation within the trainee.

Coaching is a powerful, cost-effective strategy for polishing new behaviors and filling in voids left by instructional programs (Check, 1994). It builds an essential bond between team members and encourages effective information flow, cementing learned behavior.

Opportunity to perform

The opportunity to perform trained tasks on the job affects the transfer of skills. Being assigned appropriate tasks and work experiences relevant to the job (Ford, Quinones, Sego, & Sorra, 1992) enables the trainee to apply learned skills.

Factors affecting the opportunity to perform include the goals of the assigned department of an organization, supervisory attitudes towards the trainee, work group support, and the pace of the work flow. An unsupportive environment may result in an individual only performing easy tasks or not performing trained tasks very often (Ford, Quinones, Sego, & Sorra, 1992). Supervisor's perceptions of the trainee's capability, skills, and likability also influence the opportunity to perform trained tasks. The work group needs information on how to support trainees and supervisors need training on mentoring and developing innovative work assignment procedures for newcomers (Ford, Quinones, Sego, & Sorra, 1992). Applying new skills is essential to completing the training process and successes.

Results

There is much that can be done within the organizational climate to foster employee motivation to transfer learned skills and behaviors into the work place. Table 1 shows the relationship between the motivational factors and the individual's need with possible systems action that would meet the need and motivate the trainee to transfer learned behaviors.

Table 1. Motivational Factors and the Domain of Influence

Motivational Factor	Individual Need	System Action
Instructional Approach	* Experiential - trainee applies knowledge * Organized learner content strategies - trainee performs small group research	* Provide situational experience * Reinforce small group research practices in teams on the job
Personal Investment	* Improved job performance * Career advancement * Involvement in education	* Benefits to organization - improved performance of employee, promotable staff, employee investment in education
Self efficacy	* High application of training * Complete complex job tasks	* Provide suggestions and verbal persuasion to increase self-efficacy * Inexpensive, easy, readily available
Organizational Climate	* Supportive environment from co-workers and supervisors * Policies accepting of learned behavior * Tools enabling accomplishment of job tasks * Availability of mentor	* Reinforce new behaviors and skills * Organizational commitment to training * Provide equipment, materials, and job aids * Provide tutors and coaches for guidance and reinforcement

Table 1 illustrates that the instructional approach of the training plays a major role in how the learner may incorporate the knowledge into new behaviors. By using an experiential approach, the trainee can actually try out new behaviors to see how they influence a situation. This approach solidifies learning and can benefit the organization by having the experience be one that supplies benefit to the company. Small group sessions reinforces a team situation that may be practiced in the organization.

Employees are motivated when they feel that their training is providing a personal benefit to them, such as improved job performance, salary advancement, promotions, or an involvement in their future education. This is also a benefit to the organization as they have a more productive, motivated, and creative employee.

Self-efficacy has an impact on the employee's motivation to practice learned behaviors in the work environment. When employees see themselves as having worth to a company, they will in turn strive for high application of their learning to their job by attempting complex job tasks. The organization can encourage this further by providing timely and accurate verbal praise or other rewards.

Finally, support from peers and managers by accepting new behaviors will reinforce those behaviors and skills in the work place. This also demonstrates the commitment of the company to continuing education. By having the necessary tools and equipment, the enthusiasm of the trainees can be enhanced. Mentors also provide continued support to the new trainee who is trying to apply new knowledge and skills to the job.

The implications this has for the HRD practitioner is great as it suggests that the learning responsibility must be shared by the trainee and the organization. While the learner has the responsibility to acquire the content education, maintaining motivation to apply those skills in the job requires a supportive environment. An ideal environment is one that not only supplies the employee with the necessary tools but with support from co-workers and supervisors for new behaviors and assistance in the generalization of skills. The HRD practitioner must keep in mind the web of support needed by the trainee, along with the involvement of the employee in the planning process to ensure success of the training endeavor.

Keeping in mind the factors that motivate, along with employee needs, is an important step in maximizing the return on investment for training. Maximizing the use of education dollars requires looking not only at the training program but also the culture in which the training will be transferred. When an appropriate training program is combined with a supportive environment, trainee motivation to use new skills or behaviors on the job will be magnified.

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Management Influence on the Transfer of Training

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> *Recent reviews of literature on training indicate that the supervisor was found to be the most important factor in training transfer. Therefore an experimental study was conducted in order to judge the effectiveness of the supervisors' support. Trainees were assigned to a control and an experimental group. Supervisors of the trainees from the experimental group were requested to guide their trainee before, during and after the training. Data were collected by means of questionnaires and a set of semi-structured interviews. Surprisingly, the results showed that the use of the training did not differ significantly across the two groups.*

Ever observed a group of trainees a month or two after they emerged a training program? Are the skills they learned in class being used on the job? Whatever is learned on a training, however much and however useful it is, the problem still exists of transferring the training back to the workplace. Trainees go back to work and do it the way they have always done it instead of the way they were taught to do it. This phenomenon is called transfer failure.

Recent published estimates indicate that only 10 percent of the dollars spent on training results in actual behavioral change back on trainees' jobs (Baldwin & Ford, 1988; Simons, 1990). Why does training fail to transfer? Much research in the past was carried out on the training itself. Trainees were questioned on the content of the training, the teaching methods, the training design and so on. In recent years research has taken a broader and more organizationally oriented perspective (Gradous, 1991).

The aim of this study was to focus on the organizational variables with emphasis on the trainees' boss, the supervisor. Authors such as Philips (1990), Beaudin (1987), Robinson and Robinson (1989) have concluded that managers can increase the impact of training dramatically. However, despite the importance of the subject, relatively little empirical work has been done on this topic (Branderhorst, 1993). In order to provide empirically grounded data for the debate on the influence of managers on the transfer of training, a small scale experimental study was conducted, the results of which are reported in this paper.

Management Actions to Support Training

Before discussing the study it is appropriate to discuss what is considered to be the ideal management support. Many references are found in the literature to specific management actions - before, during and after training - to support the full utilization of training on the job (Broad, 1980; Claas, Pouwer & Thijssen, 1986; Preskill, 1993; Zemke & Gunkler, 1985). The listed actions were rated important by several authors. As shown in table 1 these actions fall into three categories : management support by top managers, middle managers and first-line managers, or supervisors.

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Table 1: The management actions to support transfer of training

	Support before training	*Support during training*	*Support after training*
Top management	Rewarding training involvement. Participates in design of training program. Authorizes changed work hours to allow participation in training. Recognizing and rewarding management actions to support transfer. Provides appropriate physical facilities for training program.	Participates in one or more training sessions. Recognizing and rewarding management actions to support transfer.	Has conferences with trainees back on the job. Recognizing and rewarding management actions to support transfer.
Middle management	Arranges experienced co-workers to help trainee as needed. Participates in development of instructional objectives for training. Knowing the content of the training. Selects trainees according to established criteria. Arranges short period between training and the work environment. Recognizing and rewarding supervisors to stimulate transfer of training. Briefing supervisors and trainees on training program.	Recognizing and rewarding supervisors to stimulate transfer of training.	Recognizing and rewarding supervisors to stimulate transfer of training.

First-line management	Provides time for pre-course assignments. Prepares co-workers for trainees' arrival. Issues statement on new performance level expected following training. Discuss with trainees the reasons for selection, the content and the ways to apply it. Knowing the content of the training. Contributes to development of criteria for selecting employees. Participates in design of training program. Sign an agreement which spells out what the trainee and his boss will do to make the training beneficial.	Arranges to prevent work-related interruptions of trainees during training. Arranges to have trainees' work covered during training period. Participates in one or more training sessions. Develops opportunities for trainees to use new behaviours immediately on the job.	Has regular conferences with trainees back on job to plan use of new skills. Gives positive reinforcement for desired trainee performance. Serve as a role model for the proper use of the training. Pair trainee with a mentor for support and reinforcement. Prevents overload of work. Listen to new ideas and allow experimentation. Gives trainees the responsibility for their own work. Gives trainees clear and consistent assignments.

When the actions of the top, middle and first-line managers are compared, clear differences appear. Let's begin with the role of the top management. Top management support appears to be most important before the training. These actions include top management participation in training, allocation of resources for training and rewarding
people following a training. Furthermore, they can encourage other managers to get involved in the development and transfer of training. By recognizing and rewarding training involvement they stimulate others to support transfer of training.

Middle managers can also encourage their supervisors to stimulate transfer of training. However, relatively little work has been done on this topic. The actions for middle managers are limited, only 4 authors describe them (Claas et. al., 1986; Verhaak, Claas & Vreeswijk, 1992).

The trainee's boss, the supervisor was found to be the most important factor in training transfer (o.a. Ameel, 1992; Georgenson, 1982; Huczynski & Lewis, 1980; Zemke & Gunkler, 1985). Before and after the training they need to create conditions in which trainees can apply the learning they acquire on training to their worksituation. Before the training starts they can prepare trainees, for example by having conferences with them on reasons for selection, on performance expectations and on the content of the training (Broad, 1980; Grace & Straub, 1991). After the training they can provide ongoing reinforcement on the job for use of new behaviours learned during training. They can approve individual conferences with trainees back on the job, give regularly feedback, provide opportunities to use new skills and reward desired trainee performance.

The Study

The aim of the present study was to measure the effects of actions of supervisors to support transfer of training. This is because most of the facilitating factors were related to the supervisor (as shown in table 1). Furthermore, recent reviews of the literature on training indicate that this has seldom received empirical attention.

The following actions for supervisors appears to be mentioned by several authors (Ameel, 1992; Broad, 1980; Grace & Straub, 1990; Friedman, 1990):

- to set up a pre and post conference with the trainee to discuss use of new behaviours;
- to participate in assessment of training needs and objectives;
- to sign a contract which spells out what the supervisor and the trainee will do in order to apply new behaviours;
- to know the content of the training;
- to model behaviour by using the skills learned (to serve as a role model for the proper use of the skills);
- to provide opportunities to use and demonstrate new skills;
- to give positive reinforcement and rewards for desired trainee performance;
- to give support and feedback and help trainee as needed back on the job.

It is likely that the above-mentioned actions will increase the use of training on the job but, as said, there is a lack of empirical studies measuring the effectiveness of these actions. Therefore an in-house training of a dutch oil company was selected in order to judge the effectiveness of first-line management support before, during and after the training. The training chosen for investigation was a five-day one with a follow-up session after two months. The training program had been operating for several years. Reaction questionnaires returned by trainees over the years indicated that they enjoyed the training and saw enough opportunities to use new behaviours immediately on the job. During the training people learn how they can improve their problem-solving and decision-making skills. The teaching approach involves lectures, exercises, and handling situations directly related to the work of the trainees.

In order to ensure supervisors with a strong involvement and commitment in pursuing the transfer of training, the following instruments were developed:

- a worksheet with possible learning points for the trainee;
- an abstract of the training content for the supervisor; and
- a checklist with an overview of the actions to support transfer of training.

Worksheet An important action of the supervisor is to confer with his trainee on reasons for training and expectations following training. To support this meetings trainees and their supervisors received a list of goals, adapted from the training's learning points. They were first asked to select relevant goals to be achieved during the training. After the training the trainees were asked to consider their goals and to reduce it, in collaboration with their supervisor to more specific goals to be achieved in the coming weeks. Furthermore, they identified strategies for the supervisor to facilitate the application of their skills. An abbreviate example of this type of worksheet is shown in figure 1.

Abstract Knowing the content of the training is an effective technique to ensure management reinforcement for the training. It is important that the supervisors of the trainees attend the training first. This will help defuse the typical comment too often heard in programs: "My boss should be here for this" (Philips, 1990). This management attendance will enable the supervisor to review the training material and experience the program in the same way as the trainees. Unfortunately, this was not feasible. Therefore the supervisors received a tangible abstract of the program. Included in the abstract were an explanation of the theory, the instructional objectives, examples and exercises.

Figure 1: Worksheet with some learning points

	Before the training *Determine learning points*	*After the training* *Evaluate learning points*	
During the training I will learn:	Relevant to be achieved during the training?	Relevant to be worked on after the training?	Necessary assistance of my boss:
assess the relevant characteristics of my work-setting.	yes / no	yes / no	....
make a project-plan.	yes / no	yes / no	....
....	yes / no	yes / no	....
....	yes / no	yes / no	....

Checklist The supervisors were also given a checklist presenting an overview of relevant support actions (table 2 shows a few of these actions). The checklist could serve as a reminder. Supervisors got a overview of the actions they have to take before, during and after the training. Most of these actions are lead away from the worksheet with the exception of one. During the training supervisors have to inform co-workers about the training so that they can give reinforcement. In a cooperative environment trainees will sooner use the skills and show others how to utilize the skills to get the desired results.

Table 2: Checklist with a few of the actions for supervisors

	Management actions
Before the training	Discuss the training with the training-department. Study the abstract. Set up a conference with the trainee. Fill in the worksheet.
During the training	Inform co-workers. Develop opportunities for trainees to use new behaviours. Return the filled-in worksheet.
After the training	Set up a conference with the trainee. Fill in the worksheet. Return the filled-in worksheet. Plan another conference with the trainee.

Table 3 summarizes the instruments presented in this paragraph. Each type of instrument is listed with the management actions to support transfer of training. The assessment of the training needs and objectives was outside the scope of the investigation because they were already laid down.

Table 3: The instruments with management actions to support transfer

	Management actions
Worksheet	Set up a pre and post conference with the trainee. Sign a contract which spells out the responsibilities. Provide opportunities to use new skills. Give support and feedback.
Abstract	Know the content of the training. Serve as a role model.
Checklist	Sign a contract which spells out the responsibilities. Give positive reinforcement and rewards.

Research Design

Research must aim to provide results which are relatively unambiguous and amenable to causal interpretations. For this reason this research design includes before- and after measurements, random assignment of subjects and the use of a control group (Brook, Shouksmith & Brook, 1984).

The research design consisted of a comparison of two groups of trainees. All trainees attended the selected training whose aim was to improve their problem-solving and decision making skills. The trainees were ad random assigned to a control and an experimental group, each consisted of fifteen trainees. Supervisors of the trainees from the experimental group were requested to guide their trainee before, during and after the training as opposed to the supervisors of the trainees from the control group.

The study was designed to determine whether the behavior of supervisors influences the transfer of training. One would expect that supervisory guidance stimulates trainees to use the knowledge and skills of the training in their worksituation.

To make the training pay off, it appears to be important to invest in developing management support for transfer of training (Branderhorst, 1993). So the training-department assisted the supervisors from the experimental group. Before the training a meeting with these supervisors was scheduled. During this meeting the above-mentioned management actions to support transfer of training, like informing co-workers and having individual conferences with the trainee, were discussed. Furthermore, the supervisors had to return the filled-in worksheets with learning goals so that the training-department could check whether the actions actually happened.

Data Collection

Data were collected by means of three questionnaires distributed to and completed by all training participants before, at the end of the training and two months after the training. For the three measures the same items were used to assess subjects' reactions. At the start of the training trainees were asked to fill in on a five-point frequency scale to what extent they already mastered the learning points from the training program. The second questionnaire was completed immediately following the conclusion of the training. It sought their opinion of the ability to use the training program in practice. The third and final questionnaire was sent out two months after the end of the training. It measured the application of the training within the trainees' normal work-environment. The alpha coefficients for the three questionnaires are presented in table 4.

Table 4: The alpha coefficients for the three questionnaires

	Alpha
Questionnaire 1	0.69
Questionnaire 2	0.81
Questionnaire 3	0.98

A set of semi-structured interviews were also carried out with a sample of trainees and supervisors to obtain more detailed information than would otherwise be possible through the exclusive use of questionnaires. During the interviews they were asked for information concerning the obstacles to change encountered on the job after training, the applicability of the material, the instruments and the management actions to support transfer of training.

Results

The data were statistically handled by means of the Mann-Whitney test. Table 5 presents means, standard deviations for the three questionnaires. In brackets are the results corrected for the pre-training information. The discrepancy between the pre-training and post-training scores were an estimate of the amount of behaviourial change appraised by the subjects themselves.

Table 5: Means and standard deviations for the questionnaires

	Questionnaire 1		*Questionnaire 2*		*Questionnaire 3*	
	M	SD	M	SD	M	SD
Contr.	3.27	0.52	3.87(0.60)	0.37(0.56)	2.75(0.42)	1.06(1.06)
Exp.	2.94	0.49	3.74(0.80)	0.52(0.60)	2.51(0.43)	0.68(0.81)

The results of the immediate post-training questionnaire had showed that the intentions of the subjects of the control and the experimental group differ but the difference is not significant ($Z (N=30) = -0.92, p<0.01$). The subjects of the experimental group believed that they would use the training a little bit more. However, after two months the use of the training program did not differ significantly across the two groups ($Z (N=30) = -0.83, p<0.01$). Both groups applicated the training program in their work situation in the same degree.

Over the years several authors have emphasized the role of the supervisor to facilitate the application of new learned skills & knowledge. However, the management actions to support transfer of training were not found to be significantly related to behavioral changes at work. The results of the interviews indicate that both groups saw the importance of support from the supervisor. Furthermore, they showed that the actions to stimulate the transfer were carried out by the supervisors from the experimental group and not by the other supervisors. Surprisingly, the data from this investigation suggest that the supervisor can not influence the transfer of training. Are there explanations for these results of this study?

Discussion

The results of the interviews have given a number of reasons which may explain the apparent failure of the actions of supervisors.

First, for most of the trainees rapid changes in the organization have adversely affected the applicability of the training. Pressure of work, a new supervisor, changing co-workers, as a result of reorganizations, were obstacles to use the new learned knowledge and skills. On the other hand, it is highly questionable whether the trainees and supervisors will use respectively support the training results more without these reorganizations. Moreover, the findings, as shown in table 1, suggest the main influence of the top and middle managers in the phases before, during and after the training. They have to recognize and reward management actions to support transfer. However, in this study this was not the case. It seems plausible that this will inhibit supervisors to support transfer of training.

An other explanation could be derived from table 3. It showed that the assessment of the training needs and objectives was outside the scope of the investigation. They were already laid down, but without the help of the supervisors. A meeting at with the training needs are identified with managers seems critical for transfer of training. Only training subjects lead away from the needs of the people in the normal work-environment, can be incorporated into the structure and processes of an organization. No participation of managers in the assessment of training needs can have a negative influence on the use of skills absorbed by the trainee in training (because they have to learn things they do not need).

Finally the assistance of the training-department seemed to be insufficient. They had a meeting with the supervisors from the experimental group about the support actions and instruments. However, the supervisors did not seem to influence the transfer of training. The supervisors' behaviour might drop back to the familiar old way of behaviour with no attention for transfer of training. More support and incentives appeared to be necessary. For example, a management reinforcement workshop could be an effective technique to ensure management reinforcement for a training. This program can be conducted for supervisors of the participants in a training program. The primary focus of the workshop is to teach these supervisors how to reinforce the behaviour taught in a training program.

Conclusion

A great number of management actions have suggested in the literature to provide support for the full utilization of training. However, this will not guarantee that behaviors learned in training are applied on the job. Even if their is general agreement among supervisors and trainees that these supporting actions are of high importance.

The present study indicates that many factors exert an impedient influence on transfer of training and the role of the supervisor. So appeared a lack of tangible support from the top and middle management a barrier for transfer of training. Procedures and policies to recognize and reward management actions to support transfer seemed to be facilitating. Further research is clearly needed on the role of the supervisor in connection with the actions of the top and middle managers.

Finally, the training-department have the responsibility to educate supervisors and make them aware of the impact of the work-environment on skills trainees learn in a training program. The results of this study show that almost all of the management support actions must be initiated and stimulated by HRD-practitioners. They have to take a very active role in coaching the supervisors and bring them into the training process as active partners. There is a lot of talk about gaining management support for training but none of this happened without the training-department taking the initiative and offering managers avenues to participate.

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Advancing the Profession through Journals: The Editor-Author-Profession Partnership

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The Human Resource Development Quarterly was first published in Spring, 1990, and is now in its sixth volume. A primary purpose of the journal is to provide a medium to foster the development of a community from a multi-disciplinary group of human resource development professionals. The format of the journal has been designed to provide opportunities for publication for authors from a wide range of field backgrounds, research methodologies, experience levels, and foci. Acceptance rate is running about 35%. Suggestions are made to potential authors to enhance the possibility of their having their manuscripts accepted for publication.

Spring, 1990; Volume 1, Number 1. The Human Resource Development Quarterly (HRDQ), after a long gestation period, was birthed. As acknowledged by its first editor, Richard A. Swanson of the University of Minnesota, from the beginning the HRDQ was a model of partnering. From lengthy and difficult discussions in the Research Committee of the American Society of Training and Development to fun, creative, and challenging exchanges in the conference room of the (then) Training and Development program at the University of Minnesota; from negotiations with ASTD as a potential sponsor to Jossey-Bass as a potential publisher to the University of Minnesota as a potential home--all were part of the labor pains and joyful celebration upon its birth.

Swanson (1990) acknowledged those who partnered in this process in his first editorial:

> Early champions of HRDQ included the chairs of the research committee, David Miller, Ivan Charner, Michael D. Mireau, and Neal E. Chalofsky; ASTD staff Curtis E. Plott, executive vice-president, and Nancy Olson, director of publications; and Jossey-Bass's president, Steven Piersanti. The current champions include Gary N. McLean, associate editor, and Sandra J. Johnson, assistant to the editor, the distinguished editorial board, the scores of expert reviewers, and the corporate sponsors. (p. 2)

Today, of course, Ron Jacobs, associate editor, and Maria Hruby, assistant, The Ohio State University; Peter Fish (formerly managing co-editor), and Barbara Benassi and Rebecca Johnson, current managing co-editors, University of Minnesota, have joined this core of champions, along with new players in Jossey-Bass and the Research Committee of ASTD.

Purpose

Again, in the first issue, Swanson (1990) described a vision for the role that the HRDQ could play:

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> Many of us see HRDQ as the start of a community of HRD scholars. I believe this research quarterly will provide the intellectual footing and research credibility HRD requires to mature as a field of study and practice. (p. 2)

Swanson goes on to describe the eclectic nature of the HRD field, coming as it does from such diverse backgrounds. The hope of the early champions was that the HRDQ would serve as a venue for a wide range of backgrounds committed to HRD, whose publications previously appeared in the foundational areas of expertise of the authors but were then not widely available to others in the HRD field. Experience has borne this out. Authors have come from adult education, vocational education, mineral engineering management, public administration, management, political science, labor education, industrial relations, and many more. Not only that, but practitioners and consultants, in addition to academics, have authored articles.

Another form of inclusiveness to which HRDQ has been committed has been to provide outlets for both quantitative and qualitative research (as imperfect as these descriptors might be) and to integrate the philosophies of human development and human capital.

How successful have we been in meeting these specific diversity objectives? Approaching our 300th manuscript, we have not yet had a manuscript for which there has been a unanimous recommendation (from 4 or 5 reviewers) on acceptance category (accept as is, accept with minor revisions, accept with major revisions). In fact, we have had only a handful of recommendations for which there has been unanimity around acceptance, regardless of the acceptance category. Having read every one of these manuscripts, it is my opinion that the reviewers, who represent a broad perspective of the fields undergirding HRD, who have expertise in different types of research, and who have different philosophical bases are, in fact, as we all are, trapped by the value systems and assumptions that we make, in this case specifically related to research.

So, have we succeeded in meeting our initial purpose? I believe that we have taken the right beginning steps, and, further, I believe that the HRDQ played at least a small role, along with many others, of course, in the establishment of the Academy of Human Resource Development and, thus, this meeting. For as the opportunities for fields to talk with one another grew, and as we discovered the synergy that come from the interchanges made possible through the HRDQ, we began to look for other opportunities to carry out the implementation of such a community. Even as we struggled in the HRDQ to find adequate ways to reflect research and practice interests (through, for example, the Refereed section and the Forum section), so, too, do we see the Academy continuing to struggle to answer the dilemma of what some perceive to be a dichotomy between theory (research) and practice.

With other fine journals around, has there been a need for the HRDQ? That's difficult to measure. We have had a good flow of manuscripts, but obtaining the quality desired has not been as easy. Yet, we believe that we have not had to compromise on quality, and halfway through six volumes, we have met our page length goals and have submitted manuscript to the publisher (close to) on time. Thus, there does appear to be a need for this outlet for authors. Another way to view this question is through subscription data. At present (as of December, 1994), there are 1,745 subscribers, 68% of whom are individuals, with others being libraries, corporations, and academic departments.

Another objective that has never been stated explicitly, but has clearly been met, has been to provide an outlet for advanced graduate students' work. While media (books, software, video) reviews have been primary outlets, even including instructor assignments from which one or two might be of sufficient quality for publication, advanced graduate student authors have made significant contributions to the forum and even the refereed sections of the journal.

Format

From the beginning, the format of the journal has remained the same:

- a feature article, with one or two invited responses, with the opportunity for the feature article author to respond
- refereed articles, usually three
- forum section, which includes non-refereed articles that are designed to explore controversial concepts within the field, challenge existing theory, suggest research hypotheses that have not yet been tested, responses to articles published earlier, and so on
- media reviews, including materials that might not fall obviously into human resource development, such as research, economics, and future studies, for example

It is not always easy to stay with this format. Getting the right mix of manuscripts in time to assemble an issue requires lots of coordination, hard work, and just plain luck! The most difficult task, for me, has been identifying an appropriate feature article in sufficient time to identify invited reaction authors, and it has been even more problematic to get the reactions to the feature author for a "final word."

At the present time, a customer survey is being undertaken by Jossey-Bass to determine reactions of subscribers to the journal and the reasons for non-renewal. Out of this process we hope to find ways to improve the journal, though, at present, there is little evidence that this format will change very dramatically.

Partnering

In my editorial for the first issue of this year (McLean, 1995), "Partnering in Human Resource Development," I underscored the importance of a broad range of partnerships for the HRD field. I point to the role that many people in HRD have played in implementing continuous quality improvement. I pointed to "an underlying premise of most CQI theories is that cooperation is preferred over competition (e.g., Kohn, 1994)" (McLean, 1995, p. 1).

In his editorial, Jacobs (1994) examined the manuscripts published in the first four volumes of the journal. He found that about 18% of published articles were coauthored between academics and practitioners. While finding that to be an encouraging number, he called for more such collaboration.

Historically, there has been a good partnership working to support potential authors, though such assistance is not always understood nor appreciated by the authors. One way in which this occurs is in referring authors to other journals that the editors deem to be more appropriate for a manuscript that has been deemed inappropriate for the HRDQ. Manuscripts, for example, are frequently referred to and from Training and Development, the practitioner-oriented journal of ASTD. Further, the format of HRDQ has enabled us to work with authors whose articles are not accepted for publication in the refereed section to prepare a manuscript that can be published in the forum section. Most authors are disappointed that they have not been accepted for publication in the referred section, but they seem pleased to at least have an opportunity for publication.

Our acceptance/rejection figures also support our commitment to partnering with our authors. Table 1 shows the disposition of submitted manuscripts during the first four years of operation. Only 4% of manuscripts were accepted without revision. Most authors accept suggestions for revision gracefully, some thankfully. Occasionally, authors see such feedback as coming from an adversarial relationship. Unfortunately, sometimes reviewers use language that creates this feeling. As reviewers are seasoned researchers, they sometimes forget how difficult and painful the journey towards competence in conducting and reporting research can be. We try hard to communicate concerns while avoiding judgments that carry personal connotations.

Some authors do not understand nor appreciate the ambiguity that lies behind decisions related to publication. I stated earlier how seldom it is that we obtain a unanimous recommendation from reviewers. It should come as no surprise, then, that reviewers make very different, and sometimes contradictory, recommendations for improvement. This can even be the case around something that is as "objective" as the statistical test to be used or the method of presenting the statistical data. That's just not the world we live in. So there is constant tension between being prescriptive (thus removing the ambiguity) and encouraging (by presenting the range of feedback obtained and letting the author figure out what to improve and what to ignore).

Table 1
Outcome of Manuscripts Submitted to HRDQ, 1990-1994

Action	No. of Articles	Percent
Submitted	218	100
Rejected	106	49
Accepted without revision	9	4
Accepted after revision	66	30
Revisions requested, but not yet received	19	6
Currently under review	15	7
Submitted for refereed review, but accepted for Forum section	3	1

(McLean, 1994, p. 2)

A review of this table suggests the extent of the desire to partner with authors. A rejection rate of 49% is relatively low for a scholarly journal. Yet the quality of articles published remains high. I believe this is a reflection of the high degree of partnership that exists among reviewers, editors, and authors. In fact, when evaluating reviewers to determine their continuing presence on the reviewers' panel, we look closely at the quality of the assistance that is provided to authors for the improvement of their manuscripts. We also follow up on the telephone with those manuscripts for which revisions have been requested, but no revised manuscript has been received. Such verbal and personal encouragement almost always produces a quality manuscript that is subsequently published.

What are some other partnership arrangements? We provide books to potential reviewers for review. Potential reviewers have not always held up their end of the agreement. We find that almost 75% of those requesting books to review never submit a review (and, of course, retain the book). Further, perhaps because reviews do not carry the weight of an article in promotion and tenure considerations, review authors seem much less willing, by and large, to work at improving their reviews to meet publication criteria. Further, we have provided multiple copies of our author guidelines to faculty members for use with classes.

Partnerships between professional organizations and the HRDQ have also marked our history. As already identified, ASTD played a very important role in the formation of the journal, and it continues to play an important role in our ongoing existence. We have been very successful in recruiting authors and reviewers from many different professional organizations, including ASTD Professors' Network, AHRD, National Society for Performance and Instruction (NSPI), the Organization Development Institute, the Organization Development Network, Academy of Management, and many others. Clearly, any professional journal must be closely connected to its field, and professional organizations are good connection to the field. As indicated earlier, however, the diversity of the backgrounds of the people in the HRD field makes it difficult to identify even two or three organizations that are likely to represent the field adequately.

How Can Authors Increase the Possibility of Publication?

Every manuscript has its own idiosyncrasies. Having said that, however, there are definitively things authors can do to improve the odds of having their manuscript selected. Based on my review of almost 300 manuscripts submitted to the *Human Resource Development Quarterly*, and at least 100 more as Executive and Consulting Editor for the *Journal of Education for Business*, here are the most frequently occurring problems faced by authors. Some are easily remedied; others are more difficult.

1. Use the format specified by the journal, no matter how inappropriate you believe them to be or however unfamiliar you may be with the style. *HRDQ* requires the use of the fourth edition of the *Publication Manual of the American Psychological Association* (American Psychological Association, 1994). It has been quite amazing to me how many authors totally ignore this requirement. When manuscripts are returned to be put into this format, the revisions often come back incorrectly using the specified style. It is difficult to believe that authors actually think that editors will do this for them.
2. Have your article edited by someone with excellent writing skills, even if you have to pay for it. Often, we receive reviews back from reviewers with negative recommendations for publication, yet the comments made hardly address content. The writing is often so poor that reviewers are not able to see past the poor writing.
3. Review guidelines before submitting the article. How many copies are required? (We require six.) Who are the copies to be sent to? (We want them sent to the editor.) What is required to insure a "blind" review? (We request a separate title page that can be removed prior to blind review, and all references to "my work" or any other internal references that would provide clues of authorship must be removed.) Failure to follow these guidelines can add measurably to the time required for the review process.
4. Make the relevance to HRD clear and explicit. Our experience is that we receive many manuscripts that are implicitly appropriate for publication in the *HRDQ*, but the authors leave it up to the reviewers, and ultimately the readers, to make the connection. We want such connections to be explicit.
5. Describe methodology completely. Readers should not be left guessing about what was done or why it was done. This section doesn't have to be lengthy, it just has to be complete.
6. Avoid the formalities of a dissertation. Over the years, traditions have developed about the format and structure of a dissertation. Because most graduate students do not get the experience of writing for publication, their own model for writing continues to be the dissertation. Such structure is not appropriate for a published article. Potential authors are, hopefully, subjected to reading lots of journal articles. These should be examined prior to writing for publication. As just one example, hardly ever are hypotheses listed in a journal article as they often are in dissertations.
7. Be internally consistent with the methodology of your study. If your methods section indicates that certain steps were followed, the reader should legitimately expect that the findings would reflect these steps. If a qualitative study is described, then one should expect to see this methodology carried out throughout the article.
8. If your study is positivistic, and you are wanting to generalize your findings, be sure that the population is defined, your sampling is described, and your sample is adequate. Response rate also has to be adequate, or the burden of the argument is on you to make the case for its acceptability.

9. In positivistic studies, you must provide reliability and validity data. These are not optional requirements; they are essential in supporting the appropriateness of the findings presented.
10. If your manuscript includes statistical analyses, provide a computer disk of your raw data. All of our statistical manuscripts are reviewed by our statistical editor, Dave Passmore from The Pennsylvania State University. If a computer disk is available, assumptions behind the statistical tests can be checked and alternatives explored. If the disk is not available, long, complex letters may be required, and both parties may be left discontented with the results.
11. A qualitative study is not an excuse for a lack of vigor. In some ways, there is still a struggle going on about what criteria to use in evaluating a study that does not use traditional positivistic approaches. Our experience with reviewers, however, is that there is a general feel that qualitative articles do not generally meet quality standards--not because qualitative articles are less acceptable for publication (they aren't), but because the same rigor is often not applied.

Where Do We Go from Here?

A journal that has just completed five volumes is still an infant in the field of publishing. The Human Resource Development Quarterly is still maturing, looking for ways to improve on a continuous basis, with the commitment to being a good partner--with academicians, with practitioners, with professional organizations, and with organizations needing to be aware of cutting edge research. I would be pleased to receive feedback that will help us do this. And our editorial staff is available to talk with you about your volunteering as a reviewer or as an author.

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Advancing the Profession Through Journals: The *PIQ* Perspective

Boyd Richards and Bill Coscarelli
Current and Past Editors, *Performance Improvement Quarterly*

In this article, we review our experience as editors during the first seven years of PIQ to deal with issues directly related to the editor-author-profession partnership. We position this review in the context of a model representing sources of influence on editorial decision making. We focus our discussion on two issues: ensuring the merit and worth of submitted manuscripts and maximizing the journal's influence on an emergent field.

In the winter of 1988, *PIQ* began "a venture [to] define and shape the field" of human performance technology. With its first issue, the journal established its mission:

> *PIQ* is a peer reviewed journal addressed to professionals in the practice of human performance technology and its related disciplines. It is primarily, though not exclusively, interested in the performance of adults in organizations. *PIQ* is designed to provide leadership in defining and describing the field of human performance technology. It will seek to provide continuing education to professionals in the field who are looking for sophisticated discussion of the issues they face. While scholarly in philosophy, the editorial style will be more conversational than traditional scholarly journals--without giving up the rigor of discipline in inquiry. (Coscarelli, 1988; p. 2)

Florida State University and The National Society for Performance and Instruction need to be commended for their insightful commitment to the field of human performance technology that led them to initiate such a venture.

Seven years later the venture continues. The mission, goals, and editorial style have remained essentially unchanged through the transition of editors, turnover in the editorial board, and ongoing evolution of the field. The venture, thus far, has taken us about where we expected to be. Subscriptions gradually increased, more and more authors have submitted manuscripts, and we have earned an invitation from Richard Swanson for the "prestigious *Performance Improvement Quarterly* [to] participate in [this] symposium" (Swanson, 1994). We suspect that the path we have followed on our venture has had many of the same milestones and junctions as other professional journals. We have had to setup, maintain and work with an editorial board of busy professional volunteers. We have had to struggle to find enough quality manuscripts to fill an issue and get it printed on time. We have had to make tough decisions about accepting and rejecting manuscripts which were produced only after hundreds of hours of hard work. And we have had to position and promote ourselves in a marketplace of thousands of journals, all struggling to gain a large enough readership to pay for their existence.

This article briefly summarizes our experience during our 7-year venture to make *PIQ* what it is today. Specifically, we discuss two key issues regarding the editor-author-profession partnership. These issues are: 1)How do we ensure the merit and worth of

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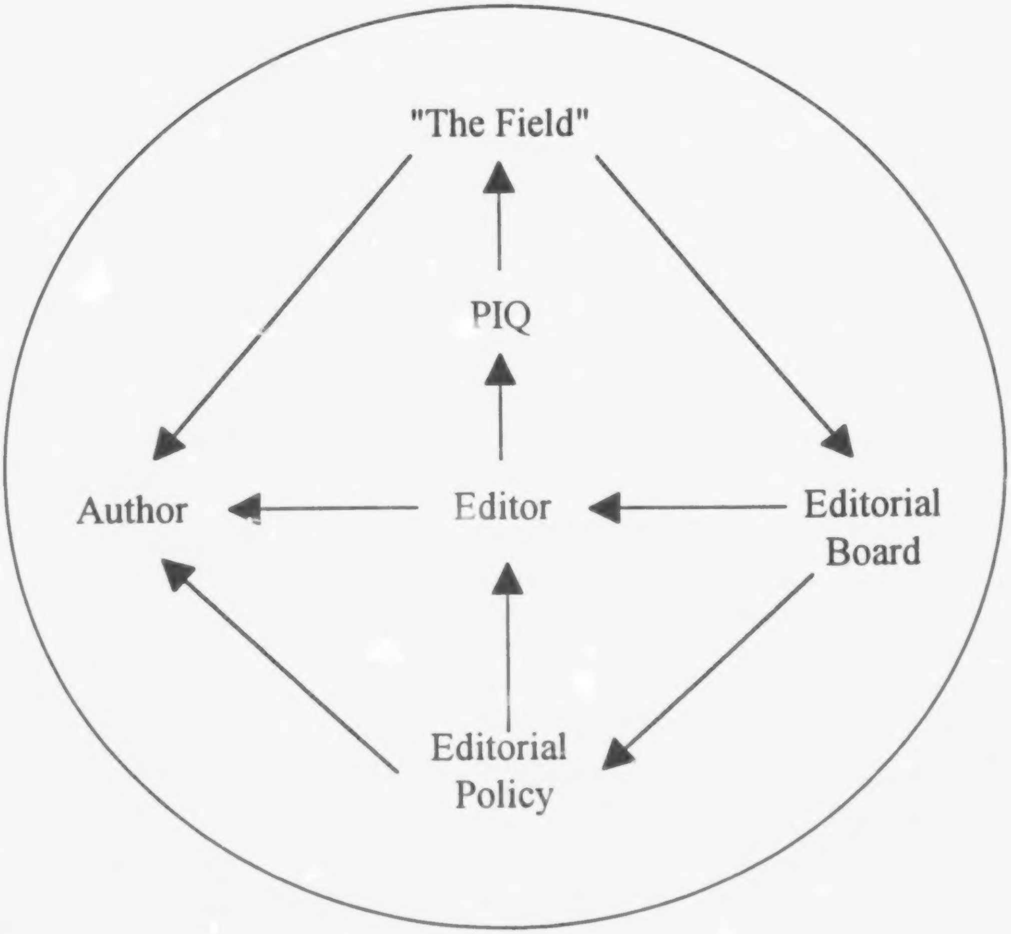
submitted manuscripts? and 2) How does a journal like *PIQ* have the most influence in an emergent field?

A Model

Central to our discussion of these issues is our model of the editor-author-profession partnership. As shown in Figure 1, we define the field as all individuals who intentionally apply principles of human performance technology. While we will use words like professionals and profession to describe this set of individuals, we acknowledge that from a technical standpoint this usage may be inaccurate. The field is really a collection of practitioners with different backgrounds who have received different types of training, who face no formal certification or licensure requirements, and who perform a wide diversity of functions. We seek to influence these practitioners by publishing meritorious manuscripts of immediate and long-term value. The arrows in the figure represent the pattern of influence between the field, authors, and editorial board and between the authors, editorial board, editorial policy, and the editor inherent in the publishing process practiced by *PIQ*.



Underlying this model is an assumption that readers in a field want and benefit from an external review process that eliminate all but the most important and best qualified manuscripts for them to read. This assumption places on representatives of the field (the editorial staff) the right to make choices on behalf of the greater good of all members of the field. The quality of such journals, therefore, is based entirely on two sets of choices: 1) choices authors make when writing manuscripts which affect the merit and worth of their submissions and 2) the choices the editorial staff makes about accepting or rejecting the authors' works. If authors do not submit technically well-written, interesting manuscripts, the editorial staff is left without meaningful choices and the quality of the journal suffers. On the other hand, if the editor and editorial board make poor choices about what's good for the field, and rejects good manuscripts, or requires inappropriate revisions to manuscripts, the quality of the journal also suffers. Only through a partnership of making good choices by means of an effective editorial process can a journal properly achieve its stature as a source of influence in the field.

Issue 1: Merit versus Worth

There are essentially two ways manuscripts get into *PIQ*. The first, and most frequent, is for unsolicited manuscripts to be accepted after a rigorous peer review process. The second is for solicited manuscripts to be included as part of a "special issue" designed around carefully chosen themes. The first path to being published maximizes the choices of authors. Based on perceived trends, issues, and "publishable topics" authors initiate the demanding process of preparing manuscripts that have merit and worth (i.e., meets editorial standards of excellence and makes a meaningful contribution to the field). In order for authors to be willing to take this step, they must believe that they have a probability of success (i.e., that their work will prove acceptable to the editorial staff).

From an editor's perspective, therefore, we have a responsibility to create an accessible open forum that will attract authors from a diversity of backgrounds and experience. That forum needs to be founded on clear standards of excellence but also needs to be flexible enough to entice new researchers and non-academic practitioners to attempt a contribution. In the early days of *PIQ*, we gladly compromised standards of merit a little to simply have sufficient manuscripts to fill an issue, making the journal, in comparison to more established journals, a relatively easy path to publication. But too much compromise of the standards would have damned the journal to a life of second-rate stature. In time, as *PIQ*'s reputation has grown, and as more authors have chosen to submit manuscripts, generally less compromise has been needed or desired. In 1991, for example, less than 30 manuscripts were submitted while in 1994 we have received over 50. As a consequence, our editorial choices have become very different. The principle question is no longer "Do I need this article to complete the issue?", but "Do I have room for this article or should I hold room for better qualified manuscripts?"

However, technical merit is not all that counts. We still feel an obligation to go easy on manuscripts that are particularly innovative or deal with difficult issues that would not have otherwise been represented. We sometimes treat manuscripts from business and industry a little less rigorously than from academia--in order to make *PIQ* equally accessible to practitioners with less time for writing. Both groups of authors have good ideas, need to be heard, and ought to have access to the forum of influence. These tradeoffs are not easily dealt with and don't always produce desired results. For example, we received a worthwhile manuscript written by a practitioner in a well-known training organization. The peer reviewers agreed with the manuscript's worth but made strong recommendations for improving its merit; it needed to be shortened and better focused. We accepted the manuscript pending revision. However, the author chose not to make the revisions--claiming insufficient time. Writing manuscripts was not part of his job description and not rewarded by his institution. We even offered to require fewer revisions, but to no avail. The manuscript has never been published. Thus, a useful piece of information is not in the literature.

The second path to being published, contributing to a special issue, maximizes the choices of the editorial staff. The editorial staff identifies topics, selects guest editors, approves authors, and can enforce editorial policy. Authors are more likely to write manuscripts because their acceptance are all but assured.

The tradeoff, however, is almost always between merit and worth. The worth, or value of manuscripts is enhanced because authors are typically selected because of their good ideas or innovative practices. On the other hand, merit is often sacrificed because the implied agreement between the editorial staff and invited authors makes it very difficult to reject submitted manuscripts or to mandate revisions.

Which path to publishing is better? Which allows *PIQ* the greatest opportunity to influence the field? Which allows authors the greatest opportunity to make a meaningful contribution? These questions lead nicely into a discussion of the next issue.

Issue 2: How does a journal like *PIQ* have the most influence in an emergent field?

The National Society of Performance and Instruction is in a state of transition, as it always has been since its conception. The society started out as a group of scholars interested in programmed instruction. It later evolved to include a broader focus on all of instructional design. The society is currently shifting to an even more broad focus – all of human performance technology. As a journal sponsored by the society, *PIQ* has struggled to match its pace of reform with that of the society. We have had to find a balance in our editorial choices between promoting new technologies and helping to incrementally advance instructional design. A couple of years ago, we did a content analysis of the journal and found that about half of the articles dealt specifically with training or instructional design topics while the other half dealt with a broader variety of performance interventions (e.g., organizational redesign, performance support systems).

At first, almost the entire readership of *PIQ* were practitioners grounded in instructional design (ID). Our strategy was to attract readers with an ID background without becoming an ID journal. In time we have also sought to attract readers with the broader interests of performance technology without abandoning our ID readership. This schizophrenic existence has made it challenging to make choices about where, when and how to influence the field.

If *PIQ* were to rely exclusively on unsolicited manuscripts, its opportunity to influence the field would be limited to 1) its effect on the decisions of potential authors to write a manuscript and submit it to the journal and 2) its editorial choices of accepting manuscripts and requiring revision prior to publication. Both of these sources of influence are indirect and rely on the authors' commitment to the field by producing quality work. To achieve its mission thus far, *PIQ* has been fortunate to work with authors who have caught the spirit Swanson (1988) described in the journal's first issue:

> The R&D process requires levels of curiosity, discipline, and rigor not required of regular work...The product is new knowledge and understandings...produced

> in small increments...that often are publicly attacked on the grounds of fuddy-duddyism and foolishness...[because] the link between the smaller research projects and the larger solutions escapes casual observers. The motivation to conduct R&D is a desire for progress by challenging the fads, myths, and assumptions that surround the complex issues of human learning and productivity. (p. 70)

PIQ has chosen not to rely exclusively on unsolicited manuscripts. Instead, it has regularly featured special issues. Topics for these issues have included: "Emerging Information Technologies", "Case Studies", "HPT in Public Education", "Training and Development in the Nuclear Power Industry", "Total Quality Systems", "Designing for Performance", "Performance Support Systems", and "The Changing Role of HPT". With special issues, *PIQ* potentially has more direct influence. By establishing the topic, identifying the guest editor and selecting authors, the journal can address concerns of the field in a timely and targeted manner. We can overtly control the balance given to instructional issues as compared to broader performance issues. We can give authors doing "cutting edge" work the chance to put forth their ideas and experience quickly and directly.

The advantages of special issues, however, don't come without a price. As the number of special issues increase, the space available for unsolicited manuscripts decreases, thus potentially discouraging authors from submitting them to *PIQ*. This may create lost opportunity to publish influential manuscripts that may not otherwise make it to print. The other tradeoff tends to be merit. Generally speaking, manuscripts submitted for special issues are not as well written. Authors usually feel they are doing the guest editor a favor and realize that they will not have to face the competitive peer review process. For example, in all of the special issues published to date, we can think of only a couple of manuscripts that were rejected due to their technical merit.

Conclusion

Publishing in a refereed journal is a partnership between the editor, editorial board, authors, and the members of the profession. The influence of the partners in this relationship flows in an established pattern (Figure 1) and is manifested in the quality of the choices the authors and editors make throughout the publishing process. This paper addressed two issues important to *PIQ* relative to these choices and their subsequent outcomes. The first issue deals with editors' choices that require striking a balance between merit (technical quality) and worth (value) of submitted manuscripts. In order to have influence in our emergent field of human performance technology, *PIQ* has relied on authors to invest the time and energy necessary to write scholarly articles. However, it has also been willing to compromise its desired high standards in order to nurture participation in the publishing process by nontraditional authors. The second issue deals with the authors' and editors' choices regarding solicited and unsolicited manuscripts. Again, *PIQ* has had to strike a balance between the two routes to publishing so that potential authors are attracted to *PIQ* because of the probability of successful publication and so that specific, important and timely topics can be addressed. Only time will tell whether the balances achieved thus far enable *PIQ* to help advance the profession and fulfill its part of the editor-author-profession partnership.

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Adult Education Quarterly: A Forum for Research and Theory in Human Resource Development?

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In this article we position Adult Education Quarterly (AEQ) within the fields of adult education and Human Resource Development, provide an overview of guidelines for preparing and submitting a manuscript for publication, describe the process used to review manuscripts, provide a profile of submitted manuscripts within a given year, and reflect on the future of research and publications in our respective fields.

Researchers and scholars in Human Resource Development are able to select from a number of publications that can be potentially used to disseminate their work. Knowledge of the scope and requirements of the journal being considered will significantly influence success in publication. The purpose of this article is to familiarize the reader with the scope of *Adult Education Quarterly* (AEQ), kinds of articles that are published in this journal, how it relates to the field of HRD and other journals in adult education, its editorial policies and guidelines, and how its current editors view the future of research within the fields of HRD and adult education. The views that are expressed in this article reflect those of the current editors and not necessarily the field as a whole or *AEQ*'s sponsoring agency.

Background of the Journal

The journal was originally founded in 1929 as *The Journal of Adult Education* but the name was changed in 1983 to *Adult Education Quarterly (AEQ)*. In its more formative years, the journal sported many opinion and descriptive pieces, the thoughts of leading adult educators, musings on the growth and direction of the nascent discipline called "adult education", and the first glimmerings of theory and research. Over the years, various comparative surveys of the journal have noted the trends and themes of most interest to authors and researchers. At one time Roger DeCrow, who oversaw the publishing of adult education materials for ERIC, used to produce a directory of publications which appeared in at least one issue of the journal every year. In time, the journal increasingly emphasized research and theory within the field of adult and continuing education. Currently, this emphasis represents the primary focus of *AEQ*.

AEQ represents one of a number of publications throughout the world that are devoted to issues related to adult learning. The journal enjoys the reputation of being the premier North American research journal representing the field of adult education, and is one of only a handful of journals in the world dedicated to research and theory in adult and continuing education. Journals such as *Convergence*, the *International Journal of Lifelong Education*, and *Studies in Continuing Education* represent the international reach of research and theory in the field. *AEQ* is also a frequent outlet for adult education scholars across the globe. The continuing learning of adults is, however, also of concern to the professions. It is not uncommon to find related journals, such as the *Journal of Nursing Continuing Education*, addressing the subject of adult learning. Other journals, such as *Adult Learning*, deal more directly with and attempt to specifically address practitioner concerns. Scholars within the field of HRD who are concerned with matters of theory and research impacting the adult as learner can find publishing outlets in many educationally-based journals here in the United States, in Canada, and abroad. Insofar as the field of adult education can be judged to include issues around training and settings which

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include business and industry, AEQ has over the years reflected in its pages theory and research of an HRD nature.

Editorial Policy

Adult Education Quarterly (AEQ) is committed to the dissemination of knowledge derived from disciplined inquiry in the field of adult and continuing education. With a circulation of about 5000, *AEQ* is published January, April, July, and October, under the sponsorship of the American Association for Adult and Continuing Education (AAACE). *AEQ* publishes articles representing a broad range of methodological approaches, including: a) empirical studies which use critical, action, participatory, experimental, quasi-experimental, correlational, descriptive, historical, philosophical, qualitative, or interpretive methods; b) theory-building articles; c) interpretive reviews of the literature (position statements or reasoned critiques of articles previously printed in *Adult Education Quarterly*); d) essay reviews (commissioned by editors); and e) book reviews.

Three broad criteria are used in the review and selection process. First, articles must be important in that they significantly advance knowledge and theory. Second, all material must be accurate and technically sound. Finally, articles must be well crafted; that is, they must be clear and well organized. In preparing a manuscript for submission, authors are encouraged to consider the following strategies:

1) Study the Editorial Policy and its sections on guidelines to insure that your manuscript falls within the scope of the journal and will meet stylistic requirements.

2) Consider the Review Criteria (Section E of the Editorial Policy) in developing and crafting your manuscript.

3) Study back issues of *AEQ* and its predecessor, *Adult Education*, focusing especially on articles of purpose and form similar to your manuscript.

4) Ask at least two colleagues who are objective and honest in their appraisals to critically review the manuscript before submitting it to *AEQ*.

Manuscripts submitted to *Adult Education Quarterly* must be grammatically correct and stylistically consistent. The journal uses the *Publication Manual of the American Psychological Association* (APA), Fourth Edition. Potential authors should consult this publication for rules governing references and citations as well as other elements of grammar and style. All manuscripts need to be typed, double-spaced and the author(s) need to submit four copies, retaining a copy for their own files. The editors are not responsible for returning copies to authors. Articles generally should not exceed 5000 words, including charts, tables and bibliography. Potential authors are strongly encouraged to obtain and follow Editorial Policy Guidelines for specific information on technical requirements for manuscript preparation.

Manuscript Review Procedures All manuscripts submitted for consideration for publication in*AEQ* are subjected to a systematic review process. The manuscript is first examined to determine if it conforms to the editorial guidelines for the journal (i.e. if it is "in scope"). Manuscripts considered to be "out of scope" are returned to the author(s) with a brief cover letter explaining that they are not acceptable for publication by *AEQ* in their present form and no further review of the manuscript is conducted. Manuscripts determined to be "in scope", as defined in the "guidelines for contributors" (see attachment), are submitted for further review to a panel of consulting editors (CE). Typically, three individuals from this panel are selected to review each manuscript, based on background expertise and knowledge. Decisions as to who will be asked to review the manuscript are made on the basis of the nature of the research question or topic of the manuscript, the nature of the methodology employed, and the availability of CEs. The review process is "double blind," meaning the CEs do not know the identity of the author(s) and the author(s) do not know the identities of the reviewers. CEs are requested to return their reviews within five weeks of the date in which it is sent out. CEs who have not returned their reviews with this time are contacted and requested to complete their reviews as soon as possible. In the event that a particular CE cannot complete the review within this time frame, another CE may be selected for the manuscript in question.

After all reviews have been returned to *AEQ*, they are examined by the editors and final determinations of a) Accept, b) Conditionally Accept, c) Reject and Encourage resubmission, or d) Reject are made, based on the information provided by the CEs. Final decisions on each manuscript are made by the editors of *AEQ*. Letters are then prepared informing the author(s) of the editors' decision. For manuscripts falling into categories (c) or (d), *AEQ* has no further obligation to the authors. The authors are free to re-submit revised manuscripts but they are informed that these submissions will be subjected to a new full review process. Manuscripts falling into category (a) are, for the most part, ready to publish "as is," with little if any revisions required. Manuscripts falling into the "Conditionally Accept" category require at least some revision before they will be fully accepted for publication. The conditions that must be met before this happens are carefully detailed in cover letters to the authors of these manuscripts. These letters clearly specify that the manuscript will not be published until these conditions have been met to the satisfaction of the editors. In some instances, the revised manuscript may be sent to one or more of the CEs who initially reviewed it for their feedback. When the conditions have been satisfied the authors are informed by letter that the manuscript is now ready for publication.

When a manuscript is accepted, the author will be notified and informed about the next steps in the publication process. To expedite the editing and publishing process, authors of accepted manuscripts will be asked to provide their final version on IBM-compatible or Macintosh floppy disks. Manuscripts produced using WordPerfect 5.1 for DOS or Microsoft Word 4.0 through 5.1 for Macintosh are preferred.

Manuscripts submitted to *Adult Education Quarterly* should not be under consideration for publication by any other journals, nor should they have been published previously in any form (see "Warrant Statement" in Section C). A paper may, however, have been presented at a meeting or conference. In such cases the author should state where and when such a paper was presented. After acceptance, a paper may not be published elsewhere without written permission from AAACE.

Review Criteria The following are used to review research papers submitted to *Adult Education Quarterly*:

1) *Importance of the Problem*. A problem or subject addressed by a manuscript should contribute to knowledge or theory pertinent to adult and continuing education. Importance is enhanced when a paper promotes understanding, or improvement of practice.

2) *Background*. Through the abstract and a brief introduction, readers should be provided with sufficient background information to understand the problem being addressed.

3) *Purpose*. Whether stated generally or in greater detail—as is the case with hypotheses—the purpose of the paper should be clearly and unambiguously stated.

4) *Literature Review*. Research and scholarship should be linked to relevant literature and theory. The applicability of the research and the quality of the discussion are more important than the length of the review.

5) *Approach and Procedures*. The approach and procedures must be appropriate for addressing the stated purpose(s) and research question(s).

6) *Findings*. Findings must be presented and documented to show clear relationships to the purpose(s) and research question(s). Evidence needed to support conclusions must be clearly identified, including the presentation of statistics, charts, and graphs, use of quotations, observational data, references, and citations.

7) *Conclusions*. Conclusions and logical inferences should be pertinent, clearly drawn, and convincingly supported by evidence.

8) *Readability*. All manuscripts must be well-organized, well-written, and readable.

Book Reviews Book reviews are solicited by the Book Review editor. These reviews are not submitted for blind review but are reviewed and edited by the review editor. Decisions as to the books to be reviewed and who is asked to review them are also made by the Book Review editor. "Essay Reviews" of a series of books on selected topics are occasionally commissioned by the editors of *AEQ*. These essay reviews are not submitted for review but are handled by the editors themselves. If you have suggestions for books to be reviewed, or if you should like to review a book, contact: M. Carolyn Clark, Dept. of Education-HRD, 615 Harrington, Texas A&M University, College Station, Texas 77845; Tel: 409-845-4086.

Disposition of Manuscripts Submitted

It may be helpful to potential contributors to *AEQ* to have a general profile of what happens to articles that are submitted for consideration in the journal. To this end, data from our first year as editors are provided in Tables 1 and 2. Table 1 shows that we received 84 manuscripts as of August 31, 1994. Table 2 displays the breakdown of all 191 reviews that have been received thus far. Excluding the ten manuscripts that were "out of scope" and not sent out for review, plus two solicited "forum" response manuscripts, the average acceptance rate was 21.6 percent. The content of manuscripts, as well as the authorship, reflect our commitment to diversity within the field of adult education and our intention to encourage more articles focused with an international perspective. Methodologically, we continue to accept and publish manuscripts that represent quantitative, qualitative, historical, and philosophical perspectives. We have continued having a forum section. A recent issue included solicited responses to an original forum piece along with a final rebuttal from the original author in an innovative attempt to promote ongoing dialogue among our readership.

Reflections and Future Directions

While HRD topics have not appeared prominently in the various surveys of articles published in *AEQ*, the subject has nevertheless received attention within the pages of the journal. Examples of these include Karen Watkins' recent essay review on the definition of HRD and Blomberg's piece on cost-benefit analysis for training. This list might also include pieces which are less overtly HRD-specific but have had to do with adult education in workplace settings. Joyce Stalker's article on "Deconstructing the Myth" illustrates this kind of HRD related article. The introduction of *HRDQ* in the summer of 1990 as a publication outlet for researchers of HRD has probably siphoned off some undetermined portion of papers which formerly would have found a home in AEQ. For example, articles such as Vicki Marsick's piece on alternative paradigms for research in HRD, and Annie Brook's recent qualitative piece on the functioning of groups, would have had a good chance of being published in AEQ as well.

HRD and Adult Education With respect to the field of HRD research and theory, therefore, the distinctions between *AEQ* and *HRDQ* are becoming increasingly blurred. Our ruminations on this issue are merely speculative and grounded only in our perceptions and experiences as editors and researchers. One distinction, however, that may continue to be manifest between these two journals reflects the elements of the social change philosophy which has characterized the field of adult and continuing education for many years. This intellectual "climate" is manifest in topics published recently by *AEQ*. In addition to more traditional topics,

Table 1. Disposition of manuscripts for the University of Nebraska-Lincoln 7/1/93 - 8/31/94

Month Rec	Number of Ms. Rec	Out of Scope	Reject	Reject/ Encourage	Conditionally Accept
7/93	5	0	1	3	1
8/93	3	0	2	1	0
9/93	8	1	2	4	1
10/93	7	1	2	3	1
11/93	8	1	3	2	2
12/93	4	0	2	1	1
1/94	6	0	3	1	2
2/94	10	1	5	3	1
3/94	6	2	1	1	2
4/94	5	1	1	1	2*
5/94	7	2	3	1	1
6/94	7		1		1
7/94	4				
8/94	4	1			
Totals	84	10	26	21	13
Percent	100	11.9	43.3	35.0	21.6

* Solicited forum response manuscripts

Table 2. Breakdown of all reviews received.

	Reject	Reject/Encourage	Conditionally Accept	Total
Reviews	83	50	58	191
Percentage	43.5	26.2	30.3	100

such as articles on participation, program planning, and the like, the journal is also publishing articles grounded in post-modernist frameworks and increasingly questioning the assumptions inherent in the rationality of modernity; feminist critiques of research and practice in the field; and articles exploring and pushing the boundaries of transformative learning theory. Some of the HRD articles published recently by *AEQ* have reflected a more critical stance towards the field of HRD, are not as celebrating of its accomplishments, or have maintained a skeptical perspective on organizational and management philosophies. Of course, we have no way of knowing with any degree of certainty but it is possible that authors of articles that represent more "mainstream" HRD research feel more comfortable seeking publication in *HRDQ*. Authors who are more critical of the field may be looking to journals such as *AEQ* as an outlet for their scholarship.

Having said all that, however, "mainstream" HRD researchers are still invited and encouraged to submit their work for consideration in *AEQ*. Our position as editors (and hopefully speaking for our editorial board) is that articles are not considered primarily on their ideological persuasion but on their scholarship and contribution to research and theory in the field. The journal seeks top quality manuscripts whatever their political or ideological hue as long as they fall within the scope of the journal. There are too few scholars conducting rigorous research or advancing theory within our fields. While we do not disclaim the political or ideological contexts in which all research and theory are conducted, these positions should not be used to make decisions on the merit of the scholarship. Our journals should be the place for dialogue and discussion around these differences, not a context for censorship or exclusion.

Trends in Research Methodologies The ascendence of qualitative research within the academic community is influencing editors and publishers of scholarly education journals. Criteria arising from and driven by particular methodological or epistemological approaches are being increasingly called into question. Reviewers and editors alike search for "common ground" amid this growing climate of methodological relativism. For example, as they struggle to find a voice to express their work, postmodernist scholars often tax our review editors and ourselves with their often complex and difficult language. Research designs completely foreign to traditional research are emerging within the qualitative arena and stress our abilities to effectively assess their soundness. Authors struggle to find new ways of presenting findings that are more consistent with the epistemological frameworks within which the research was conducted. Similar to the traditional art critic years ago who wondered whether modernist paintings represented art, we look at these new articles and ask, "Is this scholarship?" What constitutes "good scholarship" within these newer approaches is a question that needs to find space within our journals and we as editors need to begin convening symposia to further the conversation.

In addition to the difficult questions being posed by the nature of this research, reporting it is creating some very practical problems for editors and publishers. The substance of qualitative research studies is often difficult to communicate within the page limits traditionally imposed by editorial policies. Publication of qualitative studies sometimes results in fewer articles per issue, as allowance is made for the expanded nature of these articles. We are being pressured by these scholars to find room in our journals for their work or they will take their marbles and go elsewhere. Many of these papers represent excellent pieces of scholarship and we as editors do not want to lose them to other educational journals. But with the economic pressures that most journals are experiencing, how do we change to accommodate these newer form of research? One of the changes we at *AEQ* are considering is a move to a larger format. Traditionally, however, many scholar journals have been of a distinct size, often setting them off from other publications that are perceived to be more magazines than scholarly journals. Will moving to a larger format undermine the scholarly nature of our journals? We have several examples of serious publications that have shifted to this format. Again, however, this is an issue around which it would be helpful to generate discussion among editors, review boards, and readership.

Trends in Society Current trends within society are likely to influence the nature of the articles submitted to and considered for publication in *AEQ* and other journals dedicated to adult learning. Increasingly, emphasis in both policy and practice is being placed on the relationship of education and work. While education for work has always been a prominent aspect of the field of adult education, research and theory has largely focused on worker and labor education. Upheavals within labor and rapidly changing economic conditions in many countries throughout the world are likely to place more emphasis on this orientation, especially within adult populations. The challenge is to fully understand the complexity of these changes through careful research and theory and to avoid a narrowly focused vocational instrumentalism which is often reflected in the statements and documents of many policy-makers.

These changes are also creating demands for changes in the way higher education sees itself and does its business. We are being increasingly pressured to design educational programs and to conduct research which are more "relevant and meaningful" to the concerns of the "real world." Few of us would disagree that what we do should be relevant and meaningful to the needs of society. What is problematic, however, and should be a focus of our work as scholars, are the questions of who defines these needs, in whose interests are they being pursued, and what do we mean by relevant and meaningful. For those of us responsible for preparing professionals within our respective fields, these questions represent a potential area of scholarly endeavor and should be reflected in the pages of our journals. Examples of these areas of "need" which occupy current public debate are welfare reform and the increasing emphasis on punishment rather than rehabilitation of criminal offenders. Both areas involve education and training of adults as a central element in the debate. Yet one would be hard pressed to find sustained dialogue on these issues within our journals.

Conclusion

In the past, *The Journal of Adult Education* has been an outlet for articles related to the training and education of adults for business and the workplace. Its successor, *AEQ*, has continued this tradition, with an increased emphasis and focus on research and theory. While the differences between this journal and *HRDQ* may be blurred relative to education and training for the workplace, *AEQ* is increasingly serving as a forum for scholars who take a critical perspective to HRD. The journal, however, continues to encourage all forms of scholarship related to HRD and no scholar should feel that the intellectual climate of *AEQ* is somehow inappropriate for their work.

The future of publication in adult education and HRD faces a number of formidable challenges, both within the scholarly community and from quantum changes within society. Editors, reviewers, and the higher education community in general need to sustain conversation and dialogue around these issues, particularly within the pages of scholarly journals. This symposium marks a good beginning in that direction.

Processes Of Organizational Learning. A Framework For Training And Development Policies And Methodologies In A Learning Organization Perspective.

Massimo Tomassini
Isfol

This paper sketches a conceptual framework concerning different processes of organizational learning. The aim is to provide, through such a framework, some suggestions for reflection about new training and development policies and methodologies within enterprises in different productive and non-profit sectors in a learning organization perspective.

The crisis of the most common models of education and training interventions creates a larger demand for new policies adequate to the fast growing dynamics of change within the enterprises and the non-profit complex organizations. The policy-makers in these fields show an increasing interest for the *learning organization* as a vision which can contribute to the reshaping of the so far prevailing approaches, methods and tools for the human resources development. The ***learning organization*** is now is becoming a crucial referring point for several kinds of new interventions that mix together education-training approaches and ***organizational development*** (OD) and ***total quality*** approaches.

But the search for the operational dimensions of the ***learning organization*** should not let forget that this is not a clear-cut concept fitting for "managerial recipes" or ready-to-use formulas. The possibilities of effective uses of the ***learning organization*** idea is closely linked to an in-depth understanding of its theoretical bases, especially on the cognitive ground. The learning organization simply does not exist in nature. It is only a ***metaphor***, a conceptual artifact that allows treating different emerging phenomena in relatively homogeneous terms. These phenomena are all related to ***knowledge***, the crucial resource of our era, whose role in the economic and social processes is increasingly pivotal in very different disciplinary approaches (from economics to cognitive sciences) and also increasingly present in the common sense of those who operate in the world of the organizations. In tackling any learning organization issue one is in fact concerned with ***knowledge***, its uses, its effects. Every discourse about the learning organization is about cognitive aspects, closely intertwined with the behavioral aspects concerning individuals, groups, entire organizations.

This perspective stresses the organization as " a cognitive system that activates knowledge in order to produce new knowledge through continous learning processes" (Vicari, 1991). ***Knowledge*** is a central issue also in the business dimension. The Ceo of a very dynamic high-tech enterpise defined *organizational learning*, as something which "occurs through shared insights,knowledge and mental models..and builds on past knowledge and experience, that is on memory"(Stata, 1989). And a Japanese top consultant stated that "successful companies are those that consistently create new knowledge, disseminate it widely through the organization, and quickly embody it in new technologies and products; these activities define the "***knowledge creating***" company, whose sole business is continous innovation. (Nonaka,1991). A good synthesis is offered by Garvin (1993) in the following terms "a learning organization is an organization skilled at creating, acquiring and transferring knowledge and at modifying its behaviour to reflect new knowledge and insights".

Through the previous definitions it is possible to enphasize the fundamental multiplicity of the cognitive meaning of ***organizational learning***. In an attempt for a closer understanding of this topic, based on a recent research study (Tomassini, 1993) and following reflections, ***organizational learning*** is seen as articulated into six main different processes: ***learning by doing, knowledge sharing, translating knowledge into competencies, acquiring external knowledge, integrating explicit and tacit knowledge, implementing knowledge-based management approaches***. In the same way that the learning organization is considered as a metaphor, these process are surely not exhaustive of the complex realities they deal with; they can have only a ***dispositional*** value, that is they can assign a certain order to a series of charachteristics of something which is not a concrete object, like an organization, and especially a learning organization.

Processes Of Organizational Learning

Learning By Doing. The first fundamental process can be depicted in terms of *learning by doing*. The key word to be put forward in this case is ***routine***. Every individual learns first through routines, acting regularly in his/her more common activities (***routine*** :"regular and definite way of doing things", Oxford Dictionary). But also for the learning of the organizations ***routine*** is a crucial term, especially

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from the point of view of the ***evolutionary theory of the firm*** (Nelson Winter, 1982) in which routines are "***regular and predictable behavioural structures in an organization***" and play a very important role for many functioning and innovation processes.

Since the Thirties, several studies have shown the crucial role of routines in terms of the so-called *learning curves*. The idea was that the direct labor hours required to complete any production task decreases substantially as the total number of times the job performed increases. This drop in *per unit* costs is attributed to the learning that takes place every time the worker repeats the task because of his increasing familiarity with the production tecniques. The importance of the Nelson's and Winter's study lies in its going far beyond these "shop-floor related" results: in organizational routines they include not only those directly related to the manufacturing processes, but also, for instance, the procedures for hiring and firing or ordering new inventory, etc. and also the policies at the highest levels, such as the policies for investments, R&D and other.

In this approach routines are seen as playing in an organization the same role of *genes* in an organism. Routines are what is more typical of an organization, what makes it different from any other one, and what allows for its evolution by following the existing paths. In a similar way, the role of routines is seen as crucial in the organizational sciences, especially when the difference between formal and informal routines is stressed (Levitt March, 1982). On one side routines are formal artifacts such as rules, procedures, conventions, etc..On the other side they are something deeply related to cognitive and cultural phenomena: beliefs, frameworks, paradigms, etc.. So, on one side routines embody the ***codified knowledge*** of the organization, on the opposite they embody the ***tacit knowledge***; and they store the ***memory*** of the organization.

Following these kinds of approaches, related to the processes of learning by doing (through routines) it is possible to shed light on some fundamental characteristics of the learning organization. This is the one in which the awareness about the functioning of routines is well developed and in which different mechanisms are at work as far as the constant innovation of routines is concerned. In the learning organization there is an intensive selection among the routines, in mantaining and recombining those which work and substituting those which do not work with new ones.

Knowledge Sharing. In this perspective, the second fundamental process is ***knowledge sharing***. Knowledge in the organizations - as far as practical, routinary knowledge - is largely of a collective nature. Following the phenomenological approaches, knowledge is a "social construction"; in the organizational contexts this means that knowledge is built through the cognitive interactions of the actors, it is ***situated knowledge***, related to the ***work practices***: the ways in which people cooperate, apply and modify the routines, understand the day-to-day reality, talk each other, record the most important events in the organizational history. A very interesting recent study about groups of service technicians for the maintenance of photocopy machines shows, for instance, the ways in which they constitute ***a community of practices*** continously shaping the knowledge they use, outside - and often despite - the official channels such as training, standard operational practices, etc. (Orr, 1993). They became expert in repairing the machines mostly by telling each other "stories" about the machines and the clients, about successes and failures in repairing them.

These kinds of communities of practices can be considered successful examples of growth and change in learning, but generally things are different. The most common kind of learning is the one defined by Argyris and Schoen (1978) as ***single-loop learning***. ***Single-loop learning*** is typical of the bureacratic organization; it tends to reproduce the ***status quo*** like in the functioning of a thermostat and occurs when the detection and correction of errors permits the organization only to carry on its present policies and achieve its current objectives. The second kind of learning is the ***double-loop-learning*** which occurs when the potentialities of the knowledege sharing are really exploited, when people in the organization can compare the images that everybody has about the situation, to carry out joint enquiries, to reconstruct the collective maps about "where are we going, what is happening". ***Double-loop-learning*** not only allows the correction of errors but also the modification of the routines (norms, policies, objectives and mental models) underlying the same errors. In the Argyris and Schoen approach the third and most advanced kind of learning is called ***deutero-learning***; it consists of enquiry into the learning system by which an organization detects and corrects its errors and occurs when the organizational actors are aware of the learning processes in which they are involved, that is they are capable of learning to learn. ***Deutero-learning*** is in fact the ***learning to learn***, very frequently quoted but rarely in the appropriate way. Therefore the learning organization is the one in which people are aware of their roles as cognitive agents and are currently able to reflect on their own cognitive processes and to carry on joint enquries to assess and improve the state of the collective learning and of the shared knowledge.

Translating Knowledge Into Competences. Knowledge and learning are necessarily collective, but it is also true that they are embodied in individuals. The abilities of individuals to learn, to process knowledge, to act as experts in their field of action is a fundamental source of competitive advantage for the organization. In this sense a *learning organization is an organization of experts*, able to continously translate knowledge into competences and into successful outcomes.

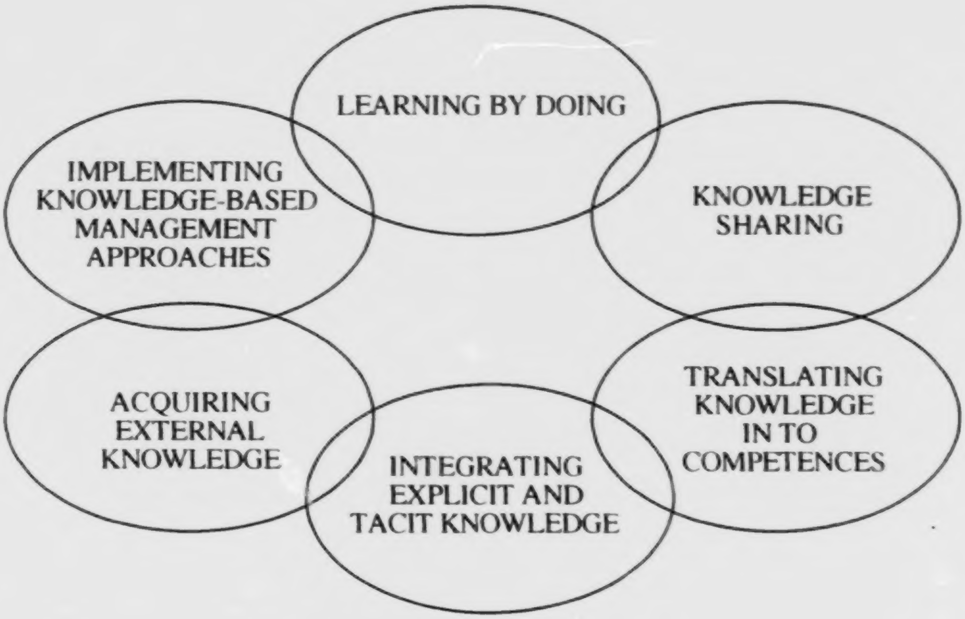
The key word here is *expertise*. Following Simon (Prietula Simon, 1989) it is possible to say that "expertise is much more than knowing a myriad of facts, expertise is based on a deep knowledge of the problems that continually arise on a particular job. It is accumulated over years of experience tackling these problems and is organized in the expert's mind in ways that allow him or her to overcome the limits of reasoning". Therefore *expertise* is not only the resource of outstanding professionals in the organization, or of the "high flyers" operating in the more specialistic functions; also a simple secretary who acts as interface with the customers can be considered a crucial expert.

Experts embody large amounts of *tacit knowledge* (or *personal knowledge*). This is the kind of knowledge studied by the philosopher of science Michael Polany (1962) as deriving from "*sets of rules which are not known as such to the person following them*". *Tacit knowledge* is a sort of hidden reserve of knowledge, not completely understood by those in which it is embodied ("*we usually know more that we can tell*", after Polany), letting appear as smooth and natural the effective performances.

Expertise has much to do with this kind of knowledge and only partially with formal knowledge, acquired in school, vocational training or firm-based courses; expertise is in fact a mix of formal and tacit aspects.

Following the cognitivistic studies the experts develop something defined as *procedural knowledge* in opposition to the *declarative knowledge* typical of non-experts and novices. The former is substantially *know-how*, while the latter is *know-what*. The novice goes on with his/her work trying to solve the problems step by step while the expert is mostly concerned with problem-setting and is able to generate very rapid, "intuitive" solutions.

In order to apply the principle that the *learning organization is an organization of experts*, innovative policies must be realized and the ways in which either knowledge is acquired or expertise is recognized and rewarded must be carefully managed.


LEARNING BY DOING
IMPLEMENTING KNOWLEDGE-BASED MANAGEMENT APPROACHES
KNOWLEDGE SHARING
ACQUIRING EXTERNAL KNOWLEDGE
TRANSLATING KNOWLEDGE IN TO COMPETENCES
INTEGRATING EXPLICIT AND TACIT KNOWLEDGE

Integrating Explicit And Tacit Knowledge. Another process of organizational learning, closely related to the previous one, can be specifically identified in the integration of explicit and tacit knowledge. In this case as well, *tacit knowledge* is a key issue, not in relation to the individual skills and competences but to the capacity of the firm, as a whole, to use and develop its cognitive potentials at all levels, to transform the personal knowledge of the individuals into valuable organizational knowledge. Therefore the *learning organization* can be conceived as an organization continously allowing knowledge to flow from person to person and from departement to department (Nonaka, 1991). In this perspective the flows are channelled in a "knowledge spiral" in which four main steps can be distinguished:

from tacit to tacit, regarding the processes of ***socialization***, that is the knowledge transfer through direct and individualized contacts, for instance, the kind of transfer which take place within on-the-job training or apprenticeship settings;

from tacit to explicit. This is the case of the ***externalization*** processes, where new value is created for the firm through the observation of tacit work routines and expertise in action. Nonaka quotes, for instance, the case of an R&D department which designed a new type of toaster starting from the observation of the activity of a chief baker in a Tokyo restaurant;

from explicit to tacit, related to the ***internalization***, that is creation of new insights from information and knowledge shared among different actors and which can acquire new meanings when entering into the personal knowledge of every single sharer;

from explicit to explicit, based on the ***combination*** of already existing information and knowledge. This is the case, for instance, of the advantages acquired storing in a computerized database the relevant data about a certain topic, or the case of internal reports referring to the state of the art about a particular problem.

An organization that is capable of facilitating all these processes is surely a learning organization, mobilizing the resources of creativity in all the different areas of activity.

Acquiring External Knowledge. In the processes of organizational learning quoted up to now knowledge is mainly internal to the organization: it is embodied in routines, built through the dynamics of the social construction of reality, linked to the ***double-loop*** or ***single-loop*** learning (or ***deutero-learning***) of the actors, to their resources of expertise and to the capacities of the firm in integrating formal and tacit knowledge. But of course there are also flows of knowledge external to the organization. Learning from outside is crucial for the survival in the market, absorbing every useful input for innovation and growth.

At this level too the difference between formal and tacit knowledge is relevant. At the first level (Winter, 1987) knowledge is an ***economic asset*** which the firms can buy on the specific markets of knowledge, like in the cases of licenses, patents, etc.. The firm can also create knowledge having an economic value within its R&D departments (producing patents and other proprietary objects which can be sold as such) or through interfirm cooperation, whose ultimate goal is not only to exploit jointly the potentialities of a certain market but to share specific knowledge about production processes or products.

The cooperation phenomena take place also through the relationships with clients, suppliers and other organizations. From ***customers***, new knowledge can be gained not only to improve the products for the same customers but also to enrich the global knowledge reserve of the organization. ***Suppliers*** as well provide precious knowledge embodied in their technologies or materials or products. Other enterprises can be a source of important acquisitions both at the ***explicit*** (like in the case of the ***benchmarking*** activities) and at the ***tacit*** level, even through ***covert*** practices (such as those related to ***reverse engineering***). Therefore, the learning organization is the one able to reduce, as far as possibile, the boundaries with the external environments and to match the acquisitions and the production of formal knowledge with all the other types of knowledge that are useful for its development.

Implementing Knowledge-Based Managerial Approaches. Last but not least, knowledge and learning must be managed at all the levels of the organization, starting from the top. The idea that the learning organization is mainly a concern of the top management, as stated by several authors, cannot be shared. But of course it is absolutely unthinkable to have a cognitively dynamic organization without positive attitudes of its managers regarding ***knowledge*** and ***knowledge-based strategic approaches***. This is particularly true considering that in our era of very high competition the enterprises need not only to react to the changes on their markets but also, within certain limits, to induce the changes.

The emerging shift in the managerial strategic approaches can be described like a passage from an ***adaptive*** kind of learning (fitting for given standards of the processes and for ***flexibility*** in the structures) to a ***generative*** one, synonimous of ***creative*** and fitting for ***latent needs*** of the consumers. (Senge, 1990). ***Enactment*** is a good term to define something which is very close the ***generative learning*** (Weick, 1984). ***Enactment*** is related to "intrusive" strategies, continuous testing of new strategic behaviours, "invention" of the evironment. In this sense, an outstanding case is Polaroid which enacted its market creating a new kind of photocamera, not analyzing the actual trends in the demand but putting forward a completely new product. Therefore the learning organization is the one in which the leading groups tend to pass ***from decisions to visions***, from managerial activities conceived as rational decision-making, based on the processing of the largest amounts of data, to activities mostly ***knowledge-oriented***. In this perspective, for instance, the planning activities have to be conceived as a continous exercise of learning within the managerial leading groups through the comparison of different points of view and the building of alternative scenarios (De Geus, 1992).

Concluding Remarks: Clues For New Policies Of Education And Raining

This paper is aimed at providing a framework concerning different processes of organizational learning and some clues for further reflections about new policies in the field of education and training in the enterprises.

A first area of reflection is mainly related to the universe of theories and practices in which trainers and consultants live, especially those operating in the field of the *organizational development* with a variety of backgrounds and specializations. The learning perspective reinforces their general mission of *helping people to help themselves* (Schein, 1987) with a stronger emphasis on the cognitive aspects. Trainers are of course mainly involved in this perspective: their skills should pass from a pattern of mere *knowledge transfer* to a more complex one related to the *facilitation of the learning processes* with greater ability in the use of different tools and techniques.

Considering this area, it should be possibile to use the above presented framework in order to identify and assess the tools and techniques more fitting for the development of the learning organization. The following are only examples but should give a rough idea about this purpose.

For instance, as far as the *learning by doing* process is concerned a renewed attention should be paid to the *action learning* methods and to the other kinds of interventions aimed at problem-solving and routine innovation. The *knowledge sharing* process is surely fostered by the techniques that tend to promote and facilitate teamwork (Metaplan or like) and the commonality of visions and practices. As far as the process of *translating knowledge into competences* is concerned, it seems to require a stronger concern from the *personnel* functions; for instance the *success competences* approach (trying to identify what *excellent* performances and related skills are in fact required in a given organization) is a good method to promote a more dynamic meaning of competence and of effective ways for the promotion and the rewarding of the expertise. *Integrating explicit and tacit knowledge* is a process which has several interfaces with the ones linked to knowledge sharing, but it requires tools and techniques aimed at *creativity* (such as those implying the adoption of lateral thinking attitudes, the acquisition of different languages and codes of interpretation, etc.) and *quality*, (related to the understanding of the organization as an integrated chain, where the value of the final product depends on the fine tuning of the efforts of all the areas involved). *Acquiring external knowledge* is a process strongly based on the traditional and ever fundamental educational and training activities (courses, seminars, etc..) whose relationships should be enhanced with the real learning dynamics which take place in the organization. But this kind of process is also served by other techniques, such as *benchmarking* or the like. For the *implementation of knowledge-based strategic approaches* the focus is less on management education and more on the new technologies of interactive thinking within managerial groups, that can have significant impacts on the mental models of the managers (*managerial flight simulators*, Senge 1990; De Geus, 1988, 1992).

A second area of reflection is related to the needs and practices internal to the dynamics of specific organization. In this case the theories and practices involved are typically those of managers and professionals operating inside the organization especially those who have strategic positions regarding the use of knowledge, its sharing, creation and dissemination, its links to the changes of the organizational behaviours and to the innovations in processes and products. These managers and professionals can be identified as the principle *learning agents* in the organization. Being a learning agent should be seen not as an option but a usual attitude and behaviour in a very wide range of activities within the organizations which tend to become a learning organization.

Within this ideal category a very important role is of course played by the *line-managers* with specific responsibilities for the human resource management and development in their areas.

Their emerging task is that of acting as *coaches* of working groups and teams, fostering high quality performances. In the perspective of the six processes *coaching* is linked to the development of at least four of those.

First, coaching means to promote higher levels of *learning by doing*, especially as far as problem-solving activities are concerned, the aim being to foster creative uses of the usual routines. Problem-solving can be seen as an incremental activity of maintenance, selection and innovation of the regular ways of doing things. Second, coaching means to intervene on the *knowledge sharing* process through positive support to the cognitive social practices (such as collective inquiries, teamworking, etc..) thus allowing double-loop learning and deutero-learning. Third, coaching is to a large extent a way of helping individuals to develop *personal knowledge* and to *transfer it into competences* which are increasingly valuable for the organization; the coach must continuously encourage the self-confidence and the creativity of people and facilitate learning. Fourth, as the activity of coaching is mainly facilitation of learning, both acquisition of formal knowledge and development of tacit knowledge must be fostered and reciprocally integrated. The coach must stimulate all the cognitive activities related to a certain working activity (observation, reflection, attempt of new solutions, etc..). Therefore all these characteristics of the emerging role of the coach are integrated in an approach to management which is first of all related to knowledge.

Other examples of the six processes as guidelines for the interpretation of the roles of the learning agents in the organization derive from different staff functions. For instance, in very common situations, the functions called ***organization*** (or like) have much to do with the process of learning by doing. The job of its members is often to analyze the different working areas and to contribute to the processes of selecting and innovating the routines, formalizing the changes which took place in practice or helping to realize which are the trends and the needs. On the other hand, in situations of technological innovation the ***information systems*** function, and those who perform roles related to the informatization processes can have strong (positive or negative) influence on the social cooperation at work and in the knowledge sharing processes. This influence is positive when the new systems introduced are distributed database or ***groupware*** type. It is negative when the automation tends to reduce the skilling and the cooperating abilities of the people.

The ***personnel*** or ***human resource development*** areas can play a very important role in the process of translating knowledge into competences: recent experiences show good results of permanent ***observatories on competences*** based not on average competences but on ***success competences*** which can be assumed as a term of reference in a specific field of activity.

The R&D function has an elective link with the integration of explicit and tacit knowledge and also with the acquisition of external knowledge. The scientists and technologists employed in the R&D areas are not only devoted to the creation of new scientific knowledge embodied in products or in patents, they have also important learning tasks, from ***intelligence***, ***gatekeeping***, observation, participation in the activities of the scientific communities.

The aforementioned ones are only examples, but may be useful to reflect on the very wide areas to be covered for different policies aimed at the development of some forms of learning organization. In this perspective the framework of the six processes could be developed to create various grids for organizational analysis, audit of the organizational learning processes, design of continuous improvement projects, etc..trying to overcome the traditional "training needs analysis" and the interventions based only on courses and seminars.

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Implementing The Learning Organization: A Case Study

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In today's dynamic, complex business environment, some organizations defend competitiveness by becoming learning organizations. Learning organizations think systemically and learn collaboratively. This article highlights a case study of an implementation of the learning organization at Ford's Electric and Fuel handling Division. It provides an overview of the collaboration between a community college and the company to deliver training and shares findings of this preliminary research. Participants experienced enhanced reflection, connectedness, courage, and application of principles.

We are in a new age. One where old ways of thinking are no longer working, and new ones must be sought (Ray & Rinzler, 1993; Senge, 1990; Wardman, 1994). Our worldview, heavily influenced by Newtonian Physics and the machine age, has caused us to take a mechanistic, reductionist view of work and organizations (Ackoff, 1993). Ackoff suggests that our current managerial and administrative problems were caused by a world that operates as a social system, but we have attempted to solve them using a mechanistic approaches. Ray and Rinzler (1993) describe mechanistic thinking as the "clockwork view" in which, "we set up clockworks of organizations that function by rigid hierarchies, with people seen as replaceable components who work on the basis of orders from above. Those orders come from mangers who have been taught that individual values and intuition are to be scorned . . . people are the parts that get in the way, rather than the contributors to success who simultaneously grow from their contribution" (p. 5). This view causes us to toss away feelings, insights, intuition, entrepreneurial drive and passion from our work.

The alternative to the mechanistic view lies in the learning organization. It is a process that values change, new thinking, creativity, knowledge, learning, and intuition. This viewpoint suggests that today's organizational problems cannot be resolved using the same thinking they were created with. Senge (1990) notes that, "from a very early age, we are taught to break apart problems, to fragment the world" (p. 3). He suggests that we pay an enormous price for such thinking because, we do not connect the consequences of our actions to the larger system or whole. The learning organization proposes a systemic or holistic way of understanding the world so that we can, "see the big picture. . . . and expand [our] capacity to create the results [we] truly desire" (Senge, 1990, p. 3). The learning organization has been proposed as the answer to shifting from the mechanistic to systemic worldview in business (Senge, 1990; Watkins and Marsick, 1993).

Background

Some organizations such as AT&T, Chaparral Steel, Federal Express, Ford, Harley-Davidson, Intel, Minnesota Educational Computing Corporation, Motorola, and others are using Peter Senge's learning organization model described in his 1990 book, *The Learning Organization*, to create competitive advantage from continuing learning on both individual and collective levels (Dumaine, 1994; Solomon, 1994).

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This paper presents an ongoing case study of a learning organization implementation process at Ford Motor Company, Electrical & Fuel Handling Division (EFHD). EFHD became committed to becoming a learning organization in 1992 when it became clear to Division Manager Bob Womac, that the only competitive edge the company had was to outlearn the competition. Becoming a learning organization is one of EFHD's seven strategic imperatives. EFHD Process Leadership Manager, David Berdish states, "The reason EFHD became a learning organization was, we decided that if we were going to be competitive, we needed to learn how to deliver to the customer faster than our competition. We wanted to devote our time to being best in class and not to organizational politics."

EFHD, an automotive components manufacturer, competes for Ford business against other non-Ford companies, even though it is a division of Ford Motor Company. EFHD has over 6000 employees in 5 locations in the US, Hungary and Ireland. Prior to adopting learning organization principles and processes, EFHD's results were similar to many floundering US companies that clung onto customers and struggled with cost and quality issues.

EFHD's turn around is impressive. Since embarking on the learning organization process in 1992, with 2 learning teams involving 38 people, the process grew to incorporate 7 learning teams involving 119 employees in 1993, to its current level of 23 teams involving 520 members. EFHD's product launch success teams (PLST's), committees used to launch new products, performed consistently over budget, under quality and late with new product introductions from 1989-1992, prior to implementing the learning organization. In contrast, the 1993-1994 track record has produced product launches under budget, on-time, with quality at or better than objectives. Additionally, EFHD has developed stronger technological capability. The financial performance has also shown a dramatic turn-around. In 1991 the company lost $10 million. In 1992, EFHD broke even. 1993-1994 performance exceeded $60 million. While Berdish acknowledges that becoming a learning is not the only reason for such success, he believes it is part of the reason for EFHD's turn around. He emphasizes that, "We want to devote our time and energy to being best in class."

Business/Education Collaboration

This study evolved out of a partnership between Washtenaw Community College (WCC) and EFHD in Ann Arbor, Michigan. In January 1993, EFHD approached WCC and requested help in developing a training program that could teach the philosophy and tools espoused by Peter Senge's 1990 book *The Fifth Discipline*. WCC and EFHD collaborated to create a sixty hour training that was piloted during the summer 1994. Since that time, 120 employees have participated in the training process.

Each learning organization training session is team taught by EFHD and WCC facilitators. The training covers each of the five disciplines: personal mastery, shared vision, team learning, mental models, and systems thinking (see Figure 1). The first half of the training is devoted to presenting the theory and practical applications of each discipline. Participants also learn systems thinking tools such as dialogue: left-hand column, hexagon technique, creative tension, ladder of inference, current reality, and causal loops, among others (see Figure 2). Participants also learn the EFHD learning model, the company's process of capturing learning (see Figure 3).

The partnership between EFHD and WCC is designed so that the faculty helps EFHD, and EFHD helps the college learn about becoming a learning organization. The training has been expanded to offer courses to the community. The success of the process has convinced Washtenaw County Administrators, a local hospital, local schools, some Ford suppliers, and the State of Michigan Small Business Development Centers to adopt the learning organization model. To meet the demands for this new, innovative approach, WCC is in the process of creating a center for organizational learning.

Figure 1. The Five Disciplines of the Learning Organization

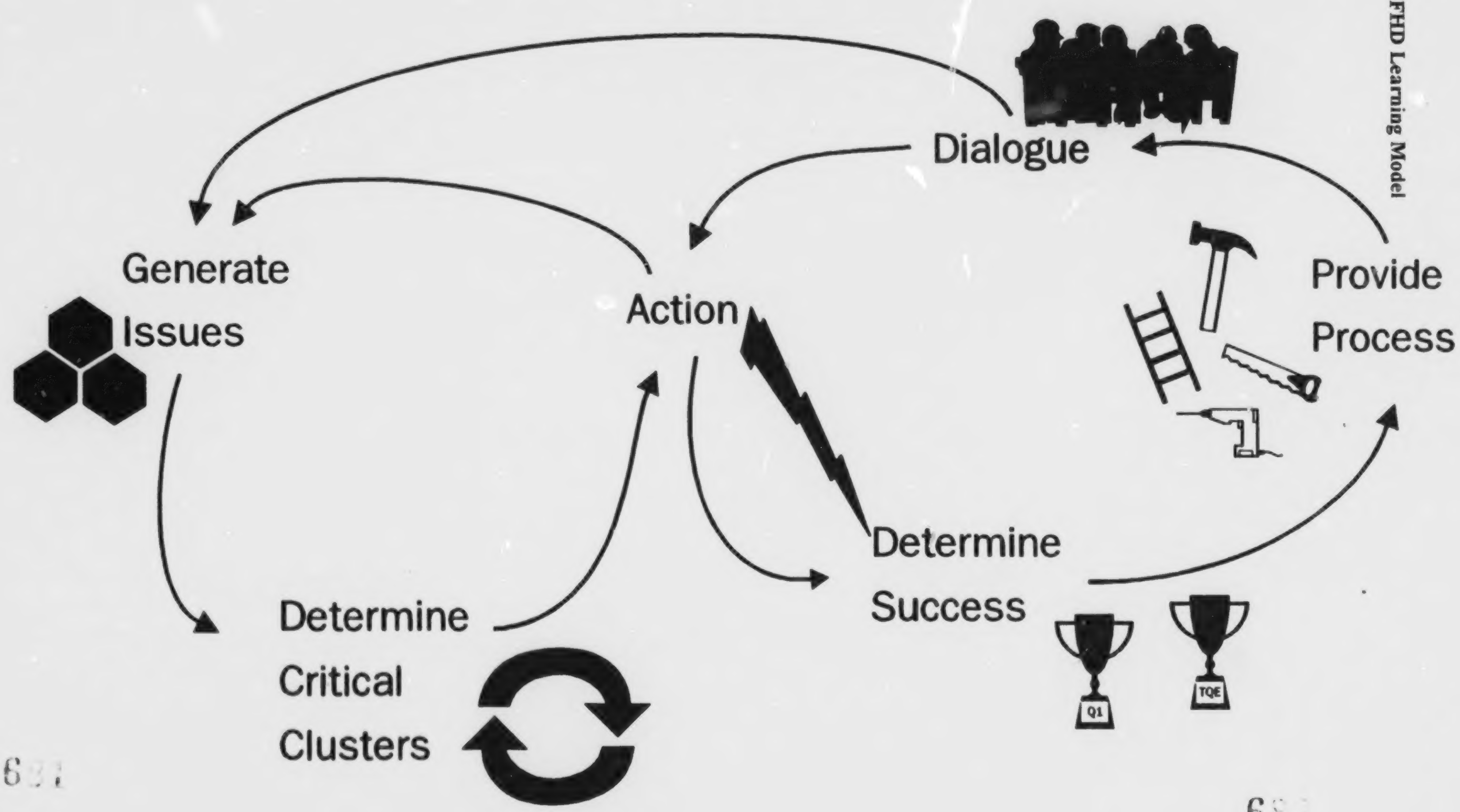
Personal Mastery:
A process of personal commitment to vision, excellence, and lifelong learning.
Shared Vision:
Sharing a picture of the future you want to realize together.
Mental Models:
Deeply ingrained assumptions that influence personal and organizational views and behaviors.
Team Learning:
The process of collective learning. The idea that 2 brains are smarter than 1.
Systems Thinking:
Conceptual framework that sees all parts as interrelated and affecting each other. Appreciation for wholes and connection.

Senge, P. (1990). The fifth discipline: The art and practice of the learning organization. New York: Doubleday, Currency.

Figure 2. Tools of the Learning Organization

Collaborative Learning:
The whole is grater than the sum of its parts. Engagement in team learning to solve problems, and share assumptions.
Dialogue:
Conversation based on creating understanding and a flow of meaning where assumptions can be shared without fear of repercussion and everyone is required to listen to each other.
Left Hand Column:
Signifies what people think in conversation versus what they say.
Ladder of Inference:
Tool that helps understand the thought process behind the creation of assumptions and biases that affect learning.
Creative Tension:
Recognition of the tension that exists between current reality and vision.
Current Reality:
The ability to take an honest look at the current situation.
Hexagon Technique (Generate Issues):
A tool used to capture the flow of a dialogue session.
Clustering (Determine Critical Clusters):
Following a hexagon process, similar issues generated during dialogue are clustered to create a picture of the system.

EFHD Learning Process



Dialogue

Generate
Issues

Action

Provide
Process

Determine
Critical
Clusters

Determine
Success

Figure 3: EFHD Learning Model

The Problem

Although organizations such as EFHD and WCC are applying the learning organization principles, little information exists on the results of such initiatives. While designing the training, we became interested in the following questions: (1) What caused employees to participate in the learning organization training? (2) What were the results of training? (3) How did the training affect participants? and (4) What were the barriers to implementing the philosophy of the learning organization?

Methodology

Because the learning organization is grounded in systems theory, we wanted to explore the problem from a holistic perspective. Thus, adopting a qualitative descriptive case study method was most appropriate in that it is an "intensive, holistic description and analysis of a bounded phenomenon such as a program, an institution, a person, a process, or a social unit" (Merriam, 1988, p. xiv). We wanted to understand individual and collective experience both during and after the training, and adjust future training if portions of it appeared to have less impact than desired. Additionally, case study research is based on conducting naturalistic inquiry that seeks interpretation in context of the educational experience (Merriam, 1988). As training facilitators and researchers, we were a part of the training and organizational context.

Sample Participants in the study were EFHD employees who attended the learning organization training. On the first day of the training, participants were briefed on the study and asked to participate. Nearly all participants were willing to participate. Participants range in age from 24 to 60 years old. Seniority with the company spans from 1 to 40 years. Participants were diverse with a mixed representation of gender, minority status, and rank in the company. Both UAW members, officials and management representatives attended the training together.

Data Collection To achieve a vivid account of participants' experiences, the qualitative approach employs assorted techniques for data collection. Data collection methods used included interviewing participants, participant observation, and document analysis. The documents analyzed included journal entries that participants kept voluntarily, written participant evaluations, and electronic mail generated by participants during and after the training.

The participant observation occurred primarily during the training period, which to-date totals 180 hours of classroom time. Follow-up visits were done at two of the plants participating in the implementation. All interviews were tape-recorded and transcribed verbatim on an ongoing basis. The research is still in process, and will continue throughout the implementation of the learning organization. To date, 17 employees have been interviewed, two have submitted journals, and 33 e-mail notes have been analyzed to collect data.

Data Analysis Data were analyzed using the constant comparative method. This involves analyzing the transcripts and observation notes with an eye for uncovering themes, or categories that suggest patterns and meanings. Merriam suggests that this method is essentially "the process of making sense out of one's data" (p. 178). An organizational learning tool, the hexagon technique, was used to analyze transcript and journal data. It involved capturing key themes and ideas in the data and clustering similar ones together. The clusters were then checked for uniqueness and named.

Findings

Preliminary findings show that attendees, all of whom participated voluntarily, attended the training for a variety of reasons. These included the desire to: learn about the learning organization; support EFHD's organizational learning specialist, Berdish; improve problem solving and decision making processes; make the business more successful; and gain a new perspective. One hourly worker attending the training commented, "I was always interested in learning and I'm always interested in anything that will make the workplace better." Participants were also prompted to attend based on an invitation from Berdish, or the encouragement of a colleague or supervisor.

The preliminary findings show that the training impacted participants reflective capacity, sense of connection in the organization and community, level of courage to take risks, and ability to apply the philosophy and tools toward meaningful change. Barriers to smooth implementation of the organization were identified as well. Each of these will be discussed briefly.

Reflection Participants described heightened levels of reflection during and after the training. They felt more open to other viewpoints and were more acutely aware of their own biases and how they affected their interpersonal relationships both at work and in their personal lives. One woman hourly worker observed: "Well, I thought that [the classes] were great and it made you take a look at yourself. And I think that until we can see ourselves in the right light we cannot see anybody else because, I think it always starts with a personal thing. Until I can see me or see what I really am, I can't see what you are. So, I think if we start with self then we can have a better impact on the whole." A man involved in the total productive maintenance process observed that, "I think [the training] was probably a lesson for a lot of people. That was something that people will remember in terms of choosing words carefully and how people react differently."

People talked about engaging in reflection, particularly relating to achieving personal vision and fulfillment. Some described having a renewed appreciation for empathy and acceptance toward others. For instance, one participant emphasized, "I think of how this class has affected me . . . and I think that impacts the next person, because in this company they can see what I am and what it is doing for me, and it helps me to see what's going on with them. It gives us better understanding within the company for all of us to learn about what each one of us is going through."

Others had a strong motivation to improve their personal levels of effectiveness. For other participants, it confirmed what they were doing right. One woman commented, "It's such a political environment, especially with the union people. [The training] confirmed or made me happy with some of the things that I've already been doing." Many weren't sure how the training was directly helping them at work but would add, "It has helped me immensely in my personal life, which has a direct impact at work." Another participant said the training make her take a look at herself.

Connection People felt a renewed sense of connection with their work and personal community both during and following the training. One participant states, "I think individuals picked up different things, but I think as a group we recognized that we were a community and part of that is learning together." Conflict was seen by one woman with over 30 years of experience on the factory floor as "OK, because [the learning organization] helps us approach conflict as a family or a community." Another participant felt that the training helped him see how he fit into the organization as a whole. It also forced him to consider the whole picture of work and not just his particular area. He reflects, "The workshop got me to look at the whole picture. I'm not just talking about the whole picture of [my job], I'm talking about the whole picture of EFHD. . . . I can look at [the general manager] now and see where he fits in. I now know where I fit in at EFHD. . . I know where I fit in the learning organization. The workshop just reinforced that."

Other participants felt that the greatest benefit of the training was the opportunity to network and connect with employees they normally would not have a reason to connect with. A participant emphasizes, "[The] one thing that the workshop did more than anything for me, it provided a chance to communicate, it provided a chance for networking. And those are the things we need more than anything right now, communication and networking." The course helped participants make connections between life and work and continue making connections afterward. Another participant noted, "When I'm in class and you try to teach me something new, I'm, trying to make that connection, and when I don't make that connection, I don't learn." Another participant talks about connecting the training to work. He says, "I think we can make that connection a lot better, especially when I talk about generating mutual trust, openness and honesty and all this stuff, I think we can do that through a learning organization."

Courage Participants described having a stronger sense of courage after the workshop. They felt more willing to take risks at work and to try to implement some of the ideas and tools used in the workshop. One woman describes her work with the union following the training. "[The training] has given me the courage and I realize the only way we're going to grow and make a difference, a real difference, is if we do integrate some of the things [from the training]."

The training enhanced trust, openness, and honesty. Using the tool of dialogue--a process of suspending judgment and truly listening to one another--facilitated these feelings. People had a renewed sense of commitment and excitement to implement the learning organization. "Getting geeked," became a common phrase of participants throughout, with reference to how they felt about the ideas and prospect of implementing them at work and at home. People had more courage to learn, try and challenge the status quo. One woman stated, "I'm more willing to suggest things that I never would have risked before. I know I will be supported in this environment of learning."

Along with a stronger sense of courage came an ardent commitment to the company and learning process. Speaking about what we did in the workshop one participant notes, "I think commitment's what we did in the workshop. . . . The workshop just reinforced that. And it also reinforced for me, we have a thing around here, we're always talking about management commitment, you know, they aren't committed, but when you can go offsite for 60 hours you know, and get paid, you know that's commitment. That's commitment."

Application People reported trying some of the tools or ideas on colleagues following training. Some succeeded, others failed, but participants are unanimous in desiring additional training. The tools and ideas have been used in the product launch success teams, work teams, and the total productive maintenance process. One graduate of the training emphasizes, "Collective learning is good. I think that's the only way you're going to be able to create a world class manufacturing plant here is that we all have to learn together." People report learning more often from each other. Graduates have also attempted to practice the tools of dialogue, hexagons, and archetypes since the training. One graduate reports, "We are trying to define a learning organization ourselves. We have a monthly meeting and we are trying to learn." One woman found the tools useful in her community. She took them to the board of directors at her church. She reports observing other groups and thinking, "boy, they sure could benefit by becoming a learning organization." Others have applied the training through helping co-facilitate the learning organization implementation training that continues at the community college.

Graduates report that they feel they need more training to make the learning organization fully functional. EFHD employees haven't waited passively for formal training, however. They have sought out supplementary articles and books, and share them enthusiastically. They have created an e-mail network to share ideas and frustrations of implementing the process.

Barriers While there is great enthusiasm for the learning organization, employees cite problems with middle management commitment and often refer to it as the "clay" that efforts get caught and blocked in. Time pressures also take EFHD employees away from devoting as much time as they would like to learning organization tools. Participants still feel hampered by what they do not know, and feel they could make greater strides in the learning organization if they were more comfortable with the concepts and tools. Like any organizational change, the employees who have attempted to implement the principles in the workplace have met resistance and suspicion of yet another change tool. Despite the barriers, the energy and enthusiasm is running high, and the participants of the training are clamoring for more learning and opportunities to share successes and lessons.

Conclusions

Preliminary results of implementing the learning organization indicate that it improves individual and collective capacity to reflect, see connections within work and the community, exercise courage, and apply the concepts. At EFHD, visible results have included improved new product launches, and enhanced total preventative maintenance on machinery, and strengthened teamwork. Additionally, financial performance of the business has improved dramatically.

The findings also suggest that conducting training of this type on a large scale yields worthwhile results on both individual and collective levels. Many participants reported improved personal relationships, greater community involvement, and better interpersonal relationships at work. The strength of this HRD model is that participants have transferred the learning to both work and personal life. The link to company strategy is clear, and employees have courageously embraced the ideas and tools of the learning organization. EFHD employees are thinking in a new way, and are achieving impressive results.

The learning organization process challenges employees to use their intelligence, ability to learn, and creativity to improve the company and themselves. It helps people connect with each other and their work. It is not a program, but rather a new process for understanding and learning together. It is the belief of EFHD and other organizations engaged in the learning organization process, that by using these tools and adopting these values they will be able to compete and dominate in ever more complex and dynamic markets.

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Coaching the Un-coachables in the Learning Organization

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This paper examines the potential of coaching as a key process within the learning organization. The paper integrates literature from three areas: the learning organization, on-the-job coaching, and individual behavior change. Effort is made to link conceptualizations of the learning organization and of coaching to performance. Special attention is given to problems of individual resistance to learning and change within the learning organization, and to coaching as a useful approach to such problems.

Learning is today's critical competency (Dixon, 1992). Organizational learning has attracted wide attention among researchers as a fruitful concept for understanding and promoting organizational transformation (Gavin, 1993; Senge, 1990; Ulrich, Jick, & Von Glinow, 1993), and for guiding human resource development (HRD) professionals (Dixon, 1992; Marsick & Watkins, 1994). Scholarship on learning organizations has been criticized as too abstract to guide the changes in specific organizational practices and policies necessary to build a learning organization (Gavin, 1993). Management actions to improve learning capabilities need to be identified and researched (Ulrich, et al., 1993). Additionally, the research literature on learning organizations can be criticized as focusing on systems and processes of learning without linking these tightly to performance.

Traditional HRD practices have been described as important components of the learning organization. The contributions of training, individual development, and organizational development are all discussed in the organizational learning literature (Brinkerhoff & Gill, 1994; Dixon, 1992; Ulrich et al., 1993). One traditional HRD practice that has received limited attention in this literature is coaching.

We define a learning organization as an organization which is skilled at systematically promoting adaptive and generative learning processes at the individual, group, and organizational levels. The outcomes of the learning organization are cognitive change, behavioral change, and performance improvement. Adaptive or single-loop learning focuses on solving current problems and adapting to the present environment without critically examining current learning strategies and practices (McGill, Slocum, & Lei, 1992). Generative or double-loop learning emphasizes continuous experimentation and feedback in an ongoing examination of the way one goes about defining and solving problems. Generative learning is conceptualized as leading to increases in the capacity to learn, and to improved performance. (Argyris, 1982; McGill, Slocum, & Lei, 1992; Mink, Owen, & Mink, 1993). Effective learning organizations must do more than learn. They must make changes in the ways work is done (Garvin, 1993). Generative learning must be linked to organizational processes and management practices in order to produce changes in behavior and performance (McGill et al., 1992).

The Learning Organization

Dixon (1992) reviewed the literature on learning at the system level in organizations from an HRD perspective and proposes adopting the concept of organizational learning as a way to reframe the topic. She also discusses the implications of this topic for HRD professionals. Organizational learning refers to learning at the system rather than individual level. Dixon organizes the literature around five elements of organizational learning: information acquisition, information distribution and interpretation, making meaning, organizational memory, and information retrieval.

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Dixon's definition of organizational learning relies on Duncan and Weiss (1979). Organizational learning is the process by which knowledge about action outcome relationships between the organization and the environment is developed. In this definition learning is viewed as a process, and its focuses is the organizational (system) level of learning. While learning within an organization occurs through individuals, know-how can reside both in individuals and in shared understandings of a group. According to Dixon, HRD professionals have substantial technology for improving individual learning, but lack an equivalent technology to address organizational learning.

McGill, Slocum, and Lei (1992) describe two organizational learning styles, generative and adaptive. Generative learning is a characteristic of learning organizations. This is the style of learning referred to by Argyris (1982) as double-loop learning. Generative learning alone is insufficient for organizational success. Internal processes and management practices must be reconceptualized and redesigned to reflect new understandings. Managers may have to unlearn mindsets associated with previous training and reward systems. Key dimensions of managerial practice in the learning organization are openness, systemic thinking, creativity, personal efficacy and empathy.

Garvin (1993) is critical of scholars whose discussions of learning organizations are too abstract to guide the changes in specific practices and policies necessary to build a learning organization. Philosophy, themes and metaphor are poor guides to practice. Garvin offers a specific definition, guidelines for practice, and recommendations for ways to measure organizational learning. According to Garvin, a clear definition of organizational learning is still needed despite years research and discussion. Garvin defines a learning organization as an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights. (p.80). Organizational learning can be traced through three overlapping stages: cognitive, behavioral, and performance improvement. Learning organizations are skilled at five main activities: systematic problem solving, experimentation with new approaches, learning from past experience, learning from the experiences and best practices of others, and transferring knowledge quickly and efficiently throughout the organization.

Watkins and Marsick(1993) present a broad vision of the learning organization and propose sculpting as a useful metaphor. They define the learning organization as one that learns continuously and can transform itself. It empowers its people, encourages collaboration and team learning, promotes open dialogue, and acknowledges the interdependence of individuals, the organization, and the communities in which people reside. Learning is seen as continuous and running parallel to work. Employees develop habits of learning. Learning is planned for and supported throughout the organization. Watkins and Marsick focus their discussion on processes of learning, rather than on outcomes. In a subsequent work (Marsick & Watkins, 1994) the authors offer their conceptualization of the learning organization as an integrative vision for the field of HRD. They characterize learning organizations as having: 1) the ability to recognize and change mental models, 2) organizational structures and norms which promote personal efficacy, 3) a culture of collaboration and partnership, and 4) a culture of trust and mutual respect.

Ulrich, Jick, and Von Glinow (1993) offer specific ways managers can build learning capabilities into their organizations. These include generating a large number of learning opportunities, generalizing learning beyond individuals, and enhancing the desire and opportunities to learn from others. They specifically recommend teaching leaders to coach, facilitate, and teach as techniques to increase organizational learning capability.

From the Learning Organization to Coaching

As we have seen, recent literature on learning organizations has recognized the need to examine specific managerial and HRD practices as ways to operationalize the literature's more abstract conceptualizations of a learning organization. Coaching is a specific workplace learning technology discussed in the management and HRD literature. On-the-job coaching is a technology which links learning closely to performance. For these reasons, we believe that it is important to examine the potential of coaching as a key process within the learning organization.

We define coaching as a process of on-the-job learning facilitated by a one-on-one coaching relationship and resulting in cognitive change, behavioral change, and performance improvement. Coaching focuses primarily on immediate job duties and produces both adaptive and generative learning. Formal coaching occurs when a superior coaches a subordinate. Most of the coaching literature discussed here discusses managerial coaching and so deals with formal coaching. Informal coaching occurs when a coworker or other non-supervisor assumes the coaching role.

Coaching occurs within a relationship of trust and acceptance. The individual must be motivated both to learn and to improve performance. The individual must also accept and respond to the coach. The coach must be motivated to help develop, not control, the individual. Coaching focuses on action and performance improvement, not just learning. It involves preparation and practice, and relies on effective communication. Finally, effective coaching promotes generative learning by helping the individual identify and address "blind spots" or ways in which the individual's actions produce unanticipated and unwanted results.

The coaching process involves a cycle of five steps. In practice these tend to occur simultaneously. The steps are: 1) planning for learning and performance, 2) observing behavior, 3) providing feedback, 4) inquiring for understanding, and 5) motivating performance. The first step involves forming a mutual commitment to the coaching relationship, and then identifying a job-related issue to focus the coaching activity. In observing behavior and providing feedback the coach seeks to help the individual identify "blind spots." These are unanticipated and unwanted results produced by the individual's choices and actions. In the process of inquiry, the coach facilitates and confirms the individual's insight, analysis, and problem solving skills. The last step, motivation, is often intrinsic to the process of learning and performance improvement. At times, especially early in the coaching process, the coach may need to draw attention to the benefits of learning and change, and to provide motivation. The benefits of learning and performance change must be perceived as worth the effort.

We follow Mink et al. (1993) in distinguishing coaching from counseling and from mentoring. Coaching, counseling and mentoring are three distinct processes which differ in time horizon, content, and focus. Coaching is concerned with the short to intermediate term, involves job-related learning, and focuses on learning and/or development for the current or future job. An individual may have several coaches simultaneously, for example, if learning several new job functions. Counseling is typically short term, but varies. It involves remedies for motivational or attitude problems, may be remedial or developmental, and can involve life issues beyond the job. Mentoring is mainly concerned with the long term. It involves career, family roles, and current performance that is future-related. Mentoring is typically developmental, and often covers current and future career decisions. Mentoring relationships tend to be exclusive. An individual normally has only one mentor.

The Importance of Coaching

Peters and Austin (1985) recommend coaching as a means of empowering individuals to put forth their best efforts and utilize more of their abilities in their work. Kanter (1983) recommends, as a strategy for creating a climate of productivity, that companies encourage their managers to adopt new roles to increase employee participation.

Fournies (1978), in a widely-read work, offers a prescriptive definition of coaching. He sees coaching as a process for improving problem work performance. His book is a practical guide to coaching, and assumes that the manager acts as the coach. Fournies conceives of coaching as much more that the facilitation of learning. By his definition, coaching involves two steps: 1) identifying unsatisfactory performance and analyzing the reasons for it (coaching analysis), and 2) face-to-face discussion of the situation to facilitate change in a subordinate's performance. Fournies provides a flow-chart to guide performance analysis (p.132). Coaching actions can include providing feedback, work planning, removing obstacles to performance, providing training or practice to the subordinate, or changing consequences for performance. The face-to-face discussion involves five steps: 1) getting agreement that a problem exists, 2) mutually discussing alternative solutions, 3) mutually agreeing on action to be taken to solve the problem, 4) follow up to measure results, and 5.)recognizing achievement when it occurs.

Evered and Selman (1989) discuss the evolution of the concept of formal coaching within the management literature. The concept of coaching first appeared in the literature during the 1950s. Development of subordinates was recognized as a management responsibility. Coaching occurred within the context of a hierarchical relationship, and stressed improving the employees' immediate job skills. Evered and Selman define coaching as a managerial process which improves individual performance. They see good coaching as an essential feature of effective management, and suggest coaching as a new management paradigm. In their view, "a management paradigm based on building an organizational context for coaching can readily outperform the existing management paradigm based on control" (p.16). The authors propose that creating an organizational culture for coaching become a core managerial activity. Coaching is seen not as a subset, but as the heart of management. This involves a shift from controlling performance to enabling and improving performance.

According to the authors, the problem with coaching as a managerial control function is that it acts as a barrier to employee development and performance improvement. At best it results in compliance to the current performance standard. At worst it can trigger employee resentment and resistance. The authors recommend their new conceptualization of coaching as a means of empowering individuals to put forth their best efforts and utilize more of their abilities in their work. They see this as being accomplished by redefining coaching as a relationship focused on improving employee performance, and moving it outside the context of superior-subordinate relationships. Coaching is characterized by a committed partnership between employee and coach, a focus on action and improvement beyond prior performance levels, effective communication as the means to such a new relationship, non-judgmental acceptance, willingness to coach and be coached, and practice and preparation. The coach's job is to identify and employee's "blind spots" and to help employees see aspects of their performance which they would not otherwise be able to see.

Orth, Wilkerson, and Benfari (1987) define coaching as the "day-to-day, hands-on process of helping employees recognize opportunities to improve their performance and capabilities (p. 67)." The authors recognize the need for a positive, trusting relationship between employee and coach. They identify four critical coaching skills as observation, analysis, questioning, and feedback.

Graham, Wedman, and Garvin-Kester (1993) evaluated the effectiveness of a coaching skills program for sales managers. They found that key coaching skills of clarifying performance expectations, providing feedback, using relevant information, observing behavior with clients, and rewarding performance can be developed through a combination of training and on-the-job follow-up. These same authors continued their study of coaching skills in a subsequent article (Graham, Wedman & Garvin-Kester, 1994). In this study they identified specific behaviors that employees associate with managers who successfully and unsuccessfully apply coaching skills. These behaviors related to a manager's ability to identify clear performance expectations, provide accurate feedback, offer suggestions to improve performance, and develop warm working relationships with employees being coached. The authors summarize their findings by noting that

> "...the more insightful, genuine, and specific managers could be, the more effective they were perceived to be ...Successful coaches were those who were good communicators, were perceptive, could set clear expectations for their employees, could see the big picture, went out of their way to seek rewards for their employees, gave useful advice, and had good people skills. These managers were constantly in touch with their staff and their professional development needs" (p. 91).

The authors describe coaching as extending beyond the typical notion of managing and control. Coaching means creating an climate of mutual respect, ongoing observation and feedback, trust, and a focus on improving performance. To be effective, coaching involves being ethical, clear about the purpose of and activity, committed to the personal success of the worker, focused on continuous communication, honest, and aware of the overall picture.

Coaching and the Learning Organization

Mink, Owen, and Mink (1993) discuss coaching in the context of development of the learning organization. They see the role of coach as central to such an organization. Coaching is defined as a qualitative relationship resulting in learning. "Coaching is the process by which one individual, the coach, creates enabling relationships with others that make it easier for them to learn" (p.2). It is the coaching relationship which enables the learner to develop. Coaching results in the adoption of new skills, knowledge, and/or values and attitudes. Coaching increases confidence and sense of control. The authors label this outcome as empowerment. Coaching occurs on the individual level, even when the context is a team or group. Successful coaching is based on mutual trust, acceptance, and respect. Coaching results in transformation of the learner, as he or she is increasingly able to perform at higher and more complex levels. This involves adopting new mental models and structures. Coaching results in greater learner self-direction and self-management.

Mink et al. contrast a traditional control-oriented, prescriptive coaching approach with the new approach they label empowerment. The problem with the traditional approach is that performance may conform to expectations of the coach, but will not exceed it. This approach reduces individual initiative and does not produce sustained improvement. Mink et al's. model of coaching is presented in Table 1.

Table 1
Prescription versus Empowerment Models of Coaching

Prescription Model	Empowerment Model
Gives goals	Develops consensus about goals
Defines roles	Lets roles evolve
Writes procedures	Lets procedures evolve
Controls behavior	Emphasizes quality as a way of life
Evaluates performance	Focuses on ways to improve processes
Directs	Collaborates
Relies on extrinsic motivation (e.g., fear)	Increases initiative and internal motivation

(Mink, Owen, & Mink, 1993, p.5)

Coaches play a key role in the learning organization by developing a high-performance climate in five ways: 1) providing leadership that values and supports learning and growth by building commitment to shared values and modeling the core values of the organization, 2) getting the right people into the organization--people with the capacity needed to do the work, and people who identify with the values of the organization, 3) empowering associates by giving them a high degree of autonomy, 4) making teamwork a norm within the organization through example, and by promoting collaboration, and 5) supporting accomplishment by removing constraints to better performance.

Mink, Owen & Mink discuss new coaching roles, skills, and tools necessary for the learning organization. They base these on Senge's discussion of learning organizations (Senge, 1990) The coach helps associates see how their assumptions act as constraints on performance. This frees the associates to become more productive contributors. This is an essential step to generative learning.

The Un-coachable Employee

We are operationalizing the *un-coachable* employee, or *player*, as someone who is unsuccessful in achieving behavioral changes and a higher level of performance, despite receiving feedback and direction in the context of a coaching relationship. In coaching the *un-coachable*, coaching strategies delineated earlier such as: 1) planning for learning and performance, 2) observing behavior, 3) providing feedback, 4) inquiring for understanding, and 5) motivating performance, may need to be finely tuned in addition to more *advanced* analytical strategies. When coaching someone who has had a history of inadequate performance it may also be critical to consider volition or meta-cognitive processes, the player's knowledge, skills, and abilities (KSAs), their need for achievement (nAch), and the *player's* attitude regarding organizational context variables such as supervision, compensation, security, etc.

Most coaching models contain motivation as a important strategy in the coaches arsenal of behavioral change drivers. Motivation is a construct that is not observable directly, and unlike dimensions of personality, motivation is not stable over time. Motivation is best viewed as a dependent variable that is activated by environmental factors. It is related to outcomes that manifest themselves in the following dependent variables: 1) intensity, 2) direction (what workers choose to do), 3) persistence, and 4) termination of action. In work settings, it is a summary label referring to person and situation determinants of action (Steers and Porter, 1987). Motivation is also a general term that refers to both *goal choice* and *goal striving* (Kanfer, 1993).

A significant amount of literature exists regarding the effects of intrinsic and extrinsic rewards on motivation. Generally intrinsic rewards are those that are derived through the satisfaction one experiences through work itself, and extrinsic rewards are those that are bestowed by the organization in the form tangible rewards and praise. Both types of rewards are important to the coach attempting to effect performance.

The scientific study of motivation has been primarily focused on behavioral approaches dating back to the work of John Watts (1913). Coaching models emphasizing the need to motivate players primarily focus on extrinsic rewards such as praise, and financial rewards. Early management theories, such as Taylor's Scientific Management Theory, make reference to the strategy of increasing motivation and performance through financial compensation systems that link wage incentives directly to performance by paying a set rate for each output produced (Taylor, 1911).

While many of today's compensation systems are more complex, the principle of tying wages directly to performance is still widely adhered to. "Depending on the size and type of the organizations surveyed and the way the question is framed, recent estimates of the number of U.S. companies using some form of incentive or merit-pay plan range from 75 to 94 percent, and many of these programs apparently have just been adopted during the last few years" (Kohn, 1993, p.13). Annual incentive plans for management were offered in 92 percent of manufacturing companies (Halachmi and Holtzer, 1987, p. 80).

However, in most instances the use of financial incentives is beyond the control of coaches in the learning organization. In addition, while behavioral programs incorporating financial incentives are strongly linked to controlling workers in terms of their goal choice, there is considerable evidence that this fundamental carrot-and-stick approach to motivation is not effective in increasing goal striving or performance (Kohn, 1993). In addition, where extrinsic rewards have been applied in work environments and inadvertently rewarded poor performance, they have been shown to have a negative impact on intrinsic motivation and performance (Rummel & Feinberg, 1988). In learning organizations coaches working with players who have been unsuccessful in improving performance, should consider intrinsic motivation practices as a means of effecting behavioral outcomes and performance.

A common method employed to increase intrinsic motivation is job enrichment practices. In the mid-1900s the importance of task characteristics was discovered that led to the exploration of the motivating potential of jobs. This led to the development of interventions aimed at enhancing intrinsic motivation and performance through job redesign.

Intrinsic motivation is defined as motivation derived from no apparent reward except from the task itself (Deci (1971). However, in efforts to increase performance through job redesign the player's job-relevant knowledge and skill, need for achievement (nAch), and level of satisfaction with aspects of the work context e.g. job security, compensation, co-workers, and supervision should be considered (Hackman & Oldham, 1980, p. 88). These player characteristics interact with job redesign interventions and should be considered by coaches attempting to increase the intrinsic motivation and performance of unsuccessful *un-coachable* employees.

Job redesign studies demonstrate that jobs with low skill variety, that do not involve a completed whole piece of work with an identifiable output, and that involve tasks with low significance have very little potential to provide the worker with the experience of *meaningfulness of the work*, and intrinsic motivation (Hackman & Oldham, 1980, p. 77). Other critical job characteristics which effect intrinsic motivation are autonomy and feedback. Jobs that provide autonomy allow the worker to experience responsibility for outcomes of the work. Feedback provides knowledge of the actual results of the work. However, jobs designed to provide a high level of intrinsic motivation must be paired with workers who have a moderate to high need to achieve, are capable of doing the work, and are satisfied with their job context variables.

These *player* factors, are important to coaches attempting to effect performance because they interact with work re-design strategies aimed at intrinsically motivating workers. If a job is designed to provide a high level of intrinsic motivation, and it is paired with an employee who does not have the capacity (KSAs) to do well in the job, great dissatisfaction will be derived from doing poorly with a negative impact on motivation and performance. If, on the other hand, it is paired with a worker who does have adequate KSA's, increases in motivation and performance will likely occur providing the worker has moderate to high level of nAch, and is satisfied with the work environment.

In the coaching relationship where the player has had a history of failing to improve performance it is important for the coach to begin eliminating possible causes of poor performance. When a coach is attempting to increase intrinsic motivation, the worker's general satisfaction with the work environment should be assessed. Aspects of the work *context* such as adequate pay, supervision, job security, and peer support may affect their willingness or ability to take advantage of the opportunities for achievement provided by the work redesign (Hackman & Oldham, 1980, p. 92). In fact, a negative relationship between performance and enriched jobs exists for workers who are dissatisfied with the *context* of their jobs and who also have low need to achieve.

Coaches in the learning organization need to be aware of the constraints that will impact the success the coach and player are able to achieve. Job design and *player* characteristics are two sets of possible constraints.

Volition and self-regulating behaviors are additional variables a coach working with an *un-coachable player* should examine. Volition is defined as the self-regulatory processes that people use to govern themselves to make something they want happen. It is associated with the mobilization of effort. Often coaches are unsuccessful in improving the *player's* performance because the *player* is unable to apply the effort required to achieve. Consequently, volition is often a critical variable in coaching situations. Increased volition can result through knowledge about ones actions, and the implementation of strategies to control thinking. These strategies are referred to as *meta-cognitive* processes. Examining these self-regulating processes in the coaching situation can often result in significant improvements in performance.

An example of a self-regulatory process is a schedule a employee develops to ensure that adequate time is committed to a particular task. However, this process may be compromised by continuous or repeated procrastination. In this instance of a pattern of maladaptive behaviors, procrastination may be viewed as a self-defeating behavior (SDB). Cudney and Hardy operationalize self-defeating behavior as negative and couterproductive thoughts and actions that are practiced responses to new situations (1993). They define self-defeating behaviors as "an action or attitude that once worked to help an individual cope with a hurtful experience but that now works against the individual to keep him or her from responding to new moments in a productive way" (p.11). Some examples of typical SDB,s include procrastination, defensiveness, compulsive ritualistic actions, suspiciousness, cynicism, controlling, and obsessive worrying.

As a coach who has been unsuccessful in eliminating or modifying a self-defeating behavior such as procrastination, it may be effective to increase the player's awareness of their own actions, and the development of strategies to control their unconscious (automatic) thinking around these behaviors. Increasing the awareness of these behaviors and *meta-cognitive* processes can help a player become more effective by eliminating behaviors that are no longer effective in their present situation.

In a coaching context Cudney and Hardy recommend this process entail helping a *un-coachable* player identify: 1) their self-defeating behavioral patterns, 2) the negative consequences associated with these behaviors, 3) the environmental factors which trigger these patterns, 4) the irrational fear around eliminating these behaviors, 5) the identification of high performance alternative behaviors and, 6) implementation strategies for these new behaviors (1993).

Conclusion

This paper examined the role of coaching in the learning organization in an attempt to better understand the complexities associated with the cognitive and behavioral changes that lead to increased organizational performance. We defined the learning organization as an organization which is skilled at systematically promoting adaptive and generative learning processes at the individual, group, and organizational levels. While the coaching process is often cited as critical in learning organizations, most coaching models are inadequate in helping coaches develop strategies to help employees who are not successful in improving their performance. This paper presented several strategies a coach might employ in working with the *un-coachable player*. They included practices which focused on increasing intrinsic motivation. These interventions addressed task variables, autonomy and feedback, and how they interacted with the *player's* need for achievement and attitude towards organizational context variables. Another set of strategies revolved around volition, and the importance of the coach being able to help the *player* identify and replace patterns of self-defeating behaviors with behaviors.

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Feedback Seeking Behavior: A Review of the Literature from the HRD Perspective

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This article explores theoretical and empirical research on feedback seeking behavior. Individual and situational factors affecting feedback seeking are considered, as well as the effects of feedback seeking on the individual and the organization. Obstacles to feedback seeking are discussed in the light of intervention possibilities. The author then focuses on a variety of resulting implications as they relate to training and organization development practices.

Just over a decade after its conceptual inception (or revival, since early feedback research has implicitly acknowledged its importance (e.g., Arps, 1917)), feedback seeking behavior (FSB) has evolved into a well developed construct in the fields of organizational behavior and social and occupational psychology. Grounding their interest on a strongly founded premise that feedback has a significant effect on individual and organizational performance (Ilgen, Fisher & Taylor, 1979; Nadler, 1979; Pearce & Porter, 1986), Ashford and Cummings (1983) transferred the ball into the seeker's court, thus denying the prevailing assumption that individuals are passive recipients of feedback (e.g., Ilgen et al., 1979). They proposed that individuals proactively seek feedback in order to have more control over the outcomes of their behavior. This new path in approach to feedback implicitly questioned the traditional view of feedback as a tool for managers to use to influence the behavior of their subordinates. Ashford subsequently identified FSB as a "conscious devotion of effort toward determining the correctness and adequacy of behaviors for attaining valued end states" (Ashford, 1986, p. 466).

Based on a comprehensive literature review, this article will summarize the effects associated with FSB and outline its individual and situational predictors. Typologies of feedback and other types of information will be included as seems necessary. Two special cases of FSB - newcomer FSB and FSB in groups - will be discussed. Corresponding implications for HRD practice will be the focus of the final section.

Why is Feedback Seeking Important?

In their pivotal work, Ashford and Cummings (1983) argued that FSB is an important individual resource for resolving feelings of ambiguity and uncertainty. They postulated that feedback seeking reduces uncertainty about behaviors, as well as how these behaviors are evaluated by others. The authors also assumed that feedback seeking played an important role in clarifying relative importance of diverse goals, as well as in helping employees to assess their personal competence in regard to a task. They concluded that FSB is an appropriate and instrumental response to the environment. Ashford and Tsui (1991) added that seeking feedback represents the essence of the discrepancy-reduction process, and suggested that it may be the most crucial aspect of a manager's self-regulation framework. Feedback seeking has also been found to represent an effective method of affect regulation among high anxious individuals (Battmann, 1988). Some results show that feedback seeking enhances observers' impressions of superior performers (e.g., Ashford & Northcraft, 1992). Ilgen and Moore (1987) found that the individuals with a choice to seek feedback took shorter time to complete the task in comparison to their peers who were only given feedback.

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Finally, given the fact that individuals are often reluctant to give negative feedback (Larson, 1984), it is argued that feedback seeking can shorten the process of a gradual buildup of anger and resentment in the feedback provider (Larson, 1989).

While appealing and useful, feedback seeking can also prove to be costly. The original article (Ashford & Cummings, 1983) identified the relationship between the feedback seeker and feedback giver in terms of the three primary costs implicitly or explicitly taken into account in actively seeking feedback. These are: inference costs which point to history, motives and feelings of the feedback giver; face loss costs accounting for the possibility of loss of esteem and of revealing potentially damaging information during the contact; and effort costs relating to the physical availability of the feedback giver and familiarity of the giver with the seeker's behavior and its complexity.

Not Only Performance Feedback: Extended Typology

Although much of the feedback and feedback seeking literature has focused on performance feedback, the information environment of an active information seeker is comprised of many other types of useful and relevant information. Review of proposed typologies seems appropriate at this point, because it will enable us to look for more diverse practical solutions.

In a thorough literature review, Van Dyne (1994) suggested that the following three aspects of feedback need to be fully defined: (1) timing; (2) content; and (3) temporal focus. Thus feedback typology would include: retrospective and prospective feedback depending on whether or not prospective job requirements were included in feedback (temporal focus); and performance and social feedback that can be complemented with other types of information such as technical or normative (Miller & Jablin, 1991; Morrison, 1993a), as these prove to be a relevant part of the content of an individual's information environment. However, it is necessary to distinguish feedback from information in that it is always based on past events, that it is more focused on specific human targets, and that it is therefore more enhancing or hurtful to one's ego (Mullen, 1994). Timing is an important factor in differentiating between expectations and feedback since the latter refers only to the communication based on past behavior which occurs after the behavior occurs (Van Dyne, 1994, p. 8).

Other typologies are based on criteria such as feedback sign (positive and negative feedback) and context in which we can differentiate between process and outcome feedback. Concluding on their empirical work, Earley, Northcraft, Lee and Lituchy (1990) described outcome feedback as the one that provides only the information on performance outcomes, while process feedback is provided to facilitate subordinate's search for successful task strategies. Finally, the number of recipients involved provides another useful tool for classification. Differentiation is made between individual and group feedback (Nadler, 1979). The uniqueness of group setting will also be addressed in this review in the context of FSB.

Probing Deeper: Why Do Individuals Seek Feedback?

The complexity of the motives for seeking feedback has been recognized in a variety of empirical and conceptual work. The picture is complicated by the fact that feedback seeking is not a fully rational process, as well as by frequent occurrences of conflict between different motives (Morrison & Bies, 1991).

One of the strong motives for FSB briefly mentioned earlier is the individual's desire to protect his or her ego and self esteem (Ashford & Cummings, 1983; Steele, 1988). Larson (1989) suggested that this motive often influences the choice of timing and content as well as inquiry strategy of feedback seeking.

It appears that the feedback once received can raise as many questions, as it does answers (Fedor, 1990). Indeed, Fedor, Rensvold and Adams (1992) found that the uncertainty about earlier feedback can be a strong motivator for feedback seeking. Some of the questions that might remain unanswered by the feedback provider are: what does the message really mean?; what are the intentions behind it?; what is the type of information that is being provided?; and how does it differ from my expectations? (Fedor et al., 1992, p. 81). Ashford and Cummings (1985) have also found that an individual's level of tolerance for ambiguity may affect his or her FSB. In the subsequent study, Bennett, Herold and Ashford (1990) found that the job-related portion of the intolerance, rather than general intolerance, motivates the seeking of job-specific feedback.

Another line of research has revolved around the impression management phenomenon as a significant determinant of feedback seeking. It has been posited and found that individuals often seek (or do not seek) feedback because of the impression that it makes on others (Ashford & Cummings, 1983; Morrison & Bies, 1991). The public image concern has been a subject of extensive research in many fields. For this review it will suffice to acknowledge that the more public the behavior of an individual, the more concerned that individual will be with how he or she appears to others (Leary & Kowalski, 1990).

Recent outlook on motives for FSB has involved an individual's goal orientation. VandeWalle (1993) grounded his research on Dweck's (1986) distinction between individuals with learning goals as those who focus on improving their ability and individuals with performance goals as those who focus on proving their ability. He proposed that individuals with learning orientation put forth more effort to seek feedback, even under challenging task conditions, and even if their ability to achieve the task is seen as poor.

Finally, feedback is most often sought simply to obtain information about one's evaluations, social standing or comparison, as well as about details of routine performance. Although simple, such motives are, however, usually confounded by some of the other motives mentioned above, which contributes to their complexity.

Situational Influences

Organizational norms have been found to influence individuals' FSB. Ashford and Northcraft (1991), for example, have found that individuals use norms about typical FSB as cues, in their decision making in regard to feedback seeking frequency. Norms are also related to social expectations that may enhance or inhibit feedback seeking.

The nature of previously obtained feedback may also have a strong influence on the subsequent FSB (Morrison & Cummings, 1992). It is unlikely that frequent negative evaluations will enhance a performer's feedback seeking. Likewise, an individual's recent performance may show as a strong predictor of future FSB (Fedor et al., 1992).

The credibility of the feedback source has been shown to influence feedback seeking (Fedor et al., 1992). Also, the Ang, Cummings, Straub and Earley's (1993) findings suggest that the feedback giver's mood is strongly related to the frequency of feedback seeking. Recent theoretical research postulates that a superior's perceived leadership style is also related to the type and frequency of information sought by a subordinate (Madzar, 1994).

How do Individuals Seek Feedback in Organizational Settings?

Ashford and Cummings (1983) distinguished between two feedback seeking strategies, monitoring and inquiry. While inquiry is described as direct asking of a potential source, monitoring is regarded as a process of meaning construction. It is comprised of observing the given environment, looking for cues useful for feedback. An individual may observe direct or indirect cues, i.e., those that refer to remarks others make about them, or those that come from actions or situations not directly related to the individual. Ashford and Tsui (1991) found that managers used inquiry and monitoring of direct cues more frequently with superiors than with peers or subordinates. The findings also show that indirect cue monitoring was used equally often with all three groups. At this point it seems necessary to emphasize that, although most of the literature to date has focused on subordinates' FSB, feedback seeking also occurs in the other direction, as well as between peers. Some recent studies have investigated this reverse relationship (Ashford and Tsui, 1991; Mullen, 1994). Recent research on mentor-protege relationship, for example, suggests that the protege can serve as a valuable source of information for the mentor. Further, obtaining such information may result in benefits such as technical skill maintenance, enhanced-self esteem and recognition for the mentor (Mullen, 1994, p. 194). These and similar studies are most welcome in the ongoing effort to create a better picture of the more general feedback environment.

Two Special Cases of Feedback Seeking: Newcomers and Groups

Feedback seeking has a particularly important function in the life of new entrants during the period of their organizational socialization. It is thus treated here as a special case of feedback seeking in which seeking of other information types has also been discussed in the existing literature. Feedback seeking in group settings also has some specificities that deserve separate attention.

Newcomer Information Seeking In the recent longitudinal investigation of newcomer proactivity, Morrison (Morrison, 1993a; Morrison, 1993b) witnessed newcomers' active involvement in the socialization process. She found that they used monitoring more frequently than inquiry in their information seeking. For technical information, however, they used mainly inquiry, and sought it from their supervisors. Otherwise, they preferred peers as a feedback source. Over time, they sought less normative information and social feedback, but more referent information and performance feedback. Overall, the frequency of information seeking was stable. Finally, she found that the more information the newcomers sought, the more satisfied they were, less inclined to leave their jobs and, the better was their performance.

Miller and Jablin (1991) also explored a variety of means newcomers use to seek various types of information. These vary in their specificity, overtness and range from overt and indirect questions, to going through third party, testing the "limits", engaging in disguising conversations, to observing and surveillance.

Feedback Seeking in Groups The literature reviewed up until now has mainly reflected on feedback seeking as an individual and ultimately organizational resource. Robinson and Weldon (1993) considered the process of feedback seeking when people work in groups. They suggested that the following four dimensions of feedback seeking seem particularly salient for groups: level of feedback sought -individual or group; if feedback is sought publicly or privately; if feedback is sought from a social or non-social source (human or non-human); and if the feedback is sought from the social source, whether that source is external or internal to the group.

The following, according to these authors, are the motives for feedback seeking in groups: self-assessment; self-validation; enhanced group performance; increased group morale; increased individual status in the group, and impression management. The authors argue that, for example, in order to improve group morale, feedback seeking will occur at the group level, a social and internal source will be used, and the seeking will be private. For the purposes of self validation, on the other hand, feedback is sought at the individual level if the person thinks he or she is performing better than the group, and at the group level in case of a reverse assumption. Social and internal source is used in feedback seeking, through a public or private channel, depending on the level. Finally, the authors posited that both accurate and biased feedback seeking can contribute to the fulfillment of these motives.

The work of Robinson and Weldon represents an isolated effort in the FSB literature to consider a group as a level of analysis. Although important as a theoretical contribution, this work has not been followed by collection of empirical evidence of proposed relationships.

Obstruction of Feedback Seeking

The review of the feedback seeking literature highlights the importance and benefits of feedback seeking to both the individual and he organization. It has been claimed that failure to seek diagnostic feedback may have a detrimental impact on the goal setting process

(Morrison & Weldon, 1990) and on managerial effectiveness (Ashford & Tsui, 1991). The ultimate consequences may be reflected in reduced accuracy and fairness of the performance appraisal process (Morrison & Bies, 1991). This section is designed to point out some of the more obvious organizational constraints to feedback seeking, based on the findings in the literature.

In a traditional supervisor-subordinate relationship, supervisor feedback obstruction (i.e., supervisor was inaccessible, or subordinates perceived high risk of directly asking a supervisor for feedback) has been found to cause anxiety, dissatisfaction and even turnover intent among subordinates (Walsh, Ashford & Hill, 1985). Another powerful constraint may be the inhibiting effect of an evaluative audience. Ashford and Northcraft (1992) suggested that :

> feedback-seeking will be more constrained in organizations where assessments of an employee's general character are informally collected from a variety of sources (e.g., peers and subordinates) and incorporated into formal performance appraisals. In such situations, peers and subordinates become an evaluative audience, and their presence is, therefore, likely to constrain performers' feedback seeking efforts. (p. 321)

Impression management costs can influence those who need feedback most (i. e., poor performers) to decide not to seek it. Thus, in settings that do not account for this effect, poor performers will rarely seek the feedback they need to improve. The possibility that asking will be interpreted as a sign of weakness, uncertainty, or lack of self-confidence will contribute to their decision (Ashford & Northcraft, 1992). Also, impression management will lead to the situations in which individuals will seek feedback that is image enhancing rather than diagnostic. This, in turn, may lead to inaccurate self-assessment (Morrison & Bies, 1991).

In certain situations and in certain professions, people cannot ask for feedback and are also less than ready to trust feedback that they spontaneously receive. Ashford and Cummings (1983) placed organization development (OD) consultants in this group "because of their particular relationships with those who have potential to offer feedback" (p. 394). To answer questions such as "Is the client responding?" or "Have I lowered resistance to change?", an OD consultant will have to rely on monitoring and interpretation of most reliable situational cues. Along similar lines, the obstacle that top managers often face is that they become surrounded by so called yes-men. They may experience what Ashford (1989) referred to as "unique problems" (p. 150) if they attempt to get feedback from the people at lower levels in the organizational hierarchy.

Another obvious obstacle is the difficulty in differentiating between feedback and other cues in the surrounding environment. It is often the case that managers give cues that are mistaken for feedback by their subordinates (Ashford, 1986), since subordinates intuitively look for feedback in almost all actions performed by their managers. Somewhat related to this obstacle is the management style, or temporary affect that may discourage a subordinate from seeking feedback.

Finally, social expectations and communication norms can generate reluctance to feedback seeking. Morrison (1992), for example, suggested that the newcomers sought less technical information over time because it was socially less accepted, i.e., they were supposed "to have learned the ropes" (Ashford & Cummings, 1985, p. 77). Although important, norms were not found to be as strong a distraction as impression management or inhibitive audience (Ashford & Northcraft, 199[illegible] Mullen, 1994). However, norms can indirectly affect the choice of a medium for feedback seeking (e.g., computer versus face-to-face), and encourage the use of the medium that might not be the preferred communication tool for the employees.

Implications for HRD Practice: Focus on Training and Organization Development

The following represents a summary of recommendations for the improvement of the existing HRD practices in training and organization development, based on the findings and assumptions discussed so far.

Enhancing Feedback Seeking via Training As feedback seeking is an important resource to all organizational members, many recommendations will apply to training programs for all audiences. Some recommendations pertain only to management training.

First, the findings that this literature review has shared with this journal's readers should be shared, in a more user-friendly form with all trainees. It is of particular importance that they: appreciate the benefits of feedback seeking; realize that they can use different strategies for seeking information; differentiate among various types of information and feedback available; become aware of potential obstacles in seeking feedback; and, finally, relate their individual motivations to seek information to the goals of the organization. Trainees should also become familiar with different communication media (e-mail, memo, face-to-face communication, etc.) and their potential benefits and pitfalls as tools for feedback seeking. These efforts should be especially increased during the socialization period when seeking information represents a crucial activity. OD consultants are also very important clients, not only in terms of enhancement of their professional knowledge, but also in terms of their skills in accurate interpretation of the environment in which they work. Finally, trainers should be alert to the current developments in the research community. FSB is the area that holds much promise, and has generated much interest as researchers are trying to paint a more complete picture of this construct.

Second, the use of process versus outcome, as well as prospective rather than retrospective feedback should be encouraged and emulated in the training setting. This would alert good performers to a false sense of security, especially if they need to change their task tactics later (Fedor et al., 1992), and would encourage poor performers to seek more feedback, as future oriented and seemingly less strictly evaluative feedback will appear less threatening.

The next recommendation is related to individual goal orientation. With the assumption that learning oriented individuals will seek more feedback, training programs should put more emphasis on the employee learning orientation in regard to their work. One can also expect that a move away from predominantly performance orientated goals may contribute to a decrease in employee anxiety and rivalry, both of which also have the potential to inhibit feedback seeking. Finally, impression management should be less relevant in such learning-oriented environments.

Management training Management training programs should address the imperative that managers become more self-conscious about their own actions and the cues they give since most of these are interpreted as feedback by their employees. They need to learn to convey the feedback picture that is consistent with their otherwise conveyed appraisals. (Ashford & Cummings, 1985).

Managers themselves may be trained to assume a norm-setting role in which they will be active feedback seekers, thus performing the behavior which will then be emulated by others (Ashford & Tsui, 1991). At the same time, they need to be trained to resist the yes-men situations by changing feedback sources and by paying more attention to cues other than verbal.

An important tool in managers' hands would be a set of measures of different aspects of performance so that they might provide both positive and negative feedback to the same individuals at the same time (Robinson & Weldon, 1993). This would decrease poor performers' reluctance to seek feedback.

Finally, leadership seminars should also address the FSB concerns. Some leadership styles do not lend themselves to feedback seeking, while others encourage it. Recent theoretical comparisons have favored transformational over transactional leadership style in this context (Madzar, 1994), but no empirical research has yet been conducted to support this proposal. Suggestions have also been made that managers be counseled or trained to hide their bad moods to the extent that these represent an obstacle for feedback seeking (Ang et al., 1993).

Enhancing Feedback Seeking via Organization Development In designing a proper feedback system, organization development efforts should be focused on systematic investigation of what information and feedback individuals really need, what strategies they have used to get them in the past and what has gone wrong within that process (Ashford, 1986). Minimizing the time and effort required to obtain feedback, should decrease the cost of its acquisition and increase its frequency (Ashford, 1986; Robinson & Weldon, 1992)

An inhibiting effect of an evaluative audience should also be of concern to an OD practitioner. The Ashford and Northcraft (1992) findings should be kept in mind particularly in those organizations that have applied practices such as 360-degree feedback where a multiparty evaluation comprises the core of performance appraisal (Hazucha, Gentile & Schneider, 1993). Suggestions have revolved around reducing the apparent evaluativeness of the work environment to the smallest possible degree. Ashford and Northcraft recommended institutionalizing opportunities for less public feedback exchanges, which should lead to enhanced FSB.

Communication norms should also be the target of change in the attempts to promote feedback seeking. Norms should include acceptance of nontraditional interactions (Ashford, 1986; Mullen, 1994), and should encourage feedback seeking in both directions - from and toward a manager or an employee.

An OD practitioner should have in mind the newcomers' needs for a variety of information, and particularly the fact that they often use monitoring strategies to obtain it. The information environment should be designed in the way that promotes what might be called cue availability. Special attention should be paid to the attempt that these cues (both social and non-social) are truly representative of a particular organizational setting.

In encouraging feedback seeking in groups, an OD practitioner should ensure availability of group level data to all group members, as well as availability of feedback from both human and non-human resources (Robinson and Weldon, 1992). Private channels for feedback seeking should be emphasized in groups where exaggerated group cohesiveness results in pressure to conform (Janis, 1972; Robinson & Weldon, 1992).

A comprehensive organizational change should also involve a careful consideration of information technology that may be used for feedback seeking purposes. The more variety employees have in their choice of the feedback seeking medium, the better are the chances that they will seek feedback.

Finally, here are some ideas that Ashford and Northcraft (1992) provided for feedback system designers. They painted a picture of a more experienced user of the feedback environment as follows: (1) attends to and uses cues from sources with legitimate power rather than from those without it; (2) looks for things that those in power do, over things they might say; (3) emphasizes negative over positive feedback from powerful others; and (4) distrusts positive feedback from coworkers, but finds indirect negative feedback from co-workers to be important (p. 215).

Conclusion

Research in the area of FSB has created new avenues for HRD practitioners in their continuous quest for the ideal organization. We are now closer to understanding the complex phenomenon of a larger feedback context than we were a decade ago, but there are still many mysteries to be unveiled. However, all current and future efforts should account for the fundamental fact that "feedback is valuable only to the extent that its nature and content fit the task at hand" (Ang et al., 1993, p. 20).

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The Role of Managers as Trainers in the Learning Organization: Implications for HRD

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> *The changing global environment for which knowledge is a strategic competitive advantage requires new training approaches to facilitate continuous learning at the individual, team and organizational level. At a conceptual level, this paper suggests that the manager as trainer approach holds promise in this endeavor, and that new roles for human resource developers will complement this approach. Empirical research is needed to support this proposition.*

The manager as trainer approach is not a new phenomenon in the field of human resource development. From an historical perspective, training can be traced back to 1800 B.C. when the Babylonian Code of Hammurabi identified rules governing the transfer of skills from one generation to another (Carnevale, 1990). More formalized training can trace its early roots to the apprenticeships, in which novice craftspersons studied under experts who shared years of knowledge and experience in their craft (Nadler, 1989, Carnevale, 1990). Informal, on-the-job training, also referred to as "sitting with Nelly" (Analoui, 1993) has also been a time-honored training approach in which peers, supervisors and managers provide training.

In today's global economy, organizations are becoming reliant upon knowledge creation and dissemination for sustained competitiveness. Nonaka (1991) contends that:

> in an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge. When markets shift, technologies proliferate, competitors multiply, and products become obsolete almost overnight, successful companies are those that consistently create new knowledge, disseminate it widely throughout the organization, and quickly embody it in new technologies and products (p. 6).

Further, he suggests that the knowledge creating companies' business is continuous innovation. Both Nonaka (1991) and Webber (1993) contend that, concurrent with this notion of continuous innovation, is the imperative to develop the organization's capacity for sustained organization-wide learning. The manager's role with respect to knowledge creating companies is changing drastically. To obtain knowledge workers, "managers, therefore have to attract and motivate the best people; reward, recognize, and retain them; train, educate, and improve them - and, in the most remarkable reversal of all, serve and satisfy them" (Webber, 1993, 27). Therefore, ensuring transfer of training and knowledge become critical activities of the manager.

Today, it is estimated that employers invest $210 billion in workplace training (Carnevale, 1990). Based upon a survey of corporate-training practices of U.S. organizations, Froiland (1993) estimates that more than 47 million people received some type of formal training from their employers in 1993. Despite the investments in training, "not more than 10% of these expenditures actually result in transfer to the job" (Georgenson, 1982, Baldwin and Ford, 1988). However, according to Rover's corporate learning process model (in Marquardt, 1994), all learning should contribute to the organization's bottom line performance. With regard to the learning environment, this model also emphasizes that learning should be as close to the workplace as possible. In other words, the learning should be embedded in the work. This rationale supports the notion that the manager as trainer approach is a promising training intervention to increase transfer of training activities within organizations.

Unfortunately, while the notion of managers as trainers may be widespread in business and industry, little, if any empirical research has been documented on this subject in the training literature. Although there is some literature in sales and technical training which supports this notion of managers as trainers, much of this literature is anecdotal in nature.

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Dimensions of Managerial Roles

Kanungo and Misra (1992) acknowledge that the nature of managerial jobs and skills has been explored with three different research strategies. One method of investigation has emphasized the approach of the classical management theorists, like Fayol and Urwick, who contend that management functions require technical, problem solving, decision making and interpersonal skills. Another method of research has focused on the role of intelligence and intelligent functioning in managerial jobs. The third method of research involves observing what managers actually do. Using this method, Mintzberg (1990) offers a "more supportable and useful description of managerial work" (p. 164). This description is derived from his review and synthesis of research on how various managers have spent their time. Mintzberg (1990) acknowledges that the four words that have dominated management vocabulary since they were first introduced by Henry Fayol in 1916 are *plan, organize, coordinate* and *control*. However, he suggests that these words only indicate some vague objectives that managers have when they work.

Mintzberg (1990) describes the manager's job in terms of ten "roles," or "organized sets of behaviors identified with a position" (p. 168). He contends that formal authority and status give rise to three interpersonal roles (figurehead, leader, liaison), which give rise to three informational roles (monitor, disseminator, spokesperson). These two sets of roles enable the manager to play four decisional roles (entrepreneur, disturbance handler, resource allocator, negotiator). The leader role is largely reflective of the responsibility that managers have for the work of the people in their unit. He contends that the manager's actions in this regard constitute this role. Further, Mintzberg asserts that "some of these actions involve leadership directly - for example, in most organizations the managers are normally responsible for hiring and training their own staff" (p. 168). In a more recent article, Mintzberg (1994) attempts to integrate

> what we already know managers do around a framework of concentric circles. At the core are the person in the job, the frame of the job, and its agenda. These are surrounded by roles managers perform at three levels: managing by information, managing through people, and managing action, each carried out inside and outside the unit (p. 11).

Managing through people, Mintzberg contends is a multi-level process. Managers lead on the individual level, "one-on-one." Managers "encourage and drive the people of their units -- motivate them, inspire them, coach them, nurture them, push them, mentor them, and so on" (p. 19). Managers lead on the group level by building and managing teams, and ultimately they lead on the unit level, especially with regard to the creation and maintenance of culture. Managers as leaders often adopt some of the roles of trainer, mentor, and coach. These roles are expanded in the context of the learning organization.

The Role of Managers in the Learning Organization

The learning organization has been defined in several ways by Senge, Beck, Melander, Morris, Schwandt, and Watkins and Marsick. However, Senge (1990, 1994), emphasizes the role of managers and leaders in creating learning organizations. He defines learning organizations as "organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p. 3).

Senge's (1990) conception of the learning organization is one in which the leader assumes new roles and responsibilities. Senge characterizes the leader's new work as being a designer, teacher and steward. Senge suggests that leader as teacher "does *not* mean leader as authoritarian expert whose job it is to teach people the 'correct' view of reality" (p. 11). The leader as teacher is about helping everyone in the organization, including the leader, to gain more insightful views of current reality. This, Senge, says "is in line with a popular emerging view of leaders as coaches, guides, or facilitators" (p. 11). In short, Senge suggests that leaders in learning organizations are responsible for "*building organizations* where people are continually expanding their capabilities to shape their future -- that is leaders are responsible for learning" (p. 9).

Senge further asserts that the future of successful organizations will be directly related to their capacity for sustained organization-wide learning. This view parallels Nonaka's (1991) conception of knowledge-creating companies. According to Nonaka, inventing new knowledge is not solely the work of the R & D department, marketing or strategic planning, it is rather, a way of behaving, a way of being, in which everyone is a knowledge-worker or entrepreneur. Given the magnitude of changes required to develop and promote organization-wide learning capabilities and continuous innovation, Senge (1994) questions why it would be assumed that training and development professionals would be solely charged with making organizational learning happen.

According to Senge, (1990) the learning capabilities that matter are inseparable from the work that people do. Managers are typically more knowledgeable about organizational matters than trainers, so consequently, trainers often lack the credibility to assist in addressing complex issues that require substantive knowledge. Trainers typically do not have accountability for managing such processes so they normally lack the capability to help employees make needed changes. For these reasons, "managers," Senge asserts, "are the only people who can be truly effective in making learning happen" (p. S46). Senge (1994) does not imply that the role of trainers and development personnel is eliminated in the learning organization. He suggests that trainers and developers have two important roles. The first involves helping managers to design learning processes because of their expertise in design and facilitation, and the second involves guiding the diffusion of new learnings. In the context of the learning organization, managers as trainers appear to be critical to achieving sustained organization-wide learning.

Several cases of exemplary global learning organizations which support Senge's contentions about managers roles in the learning organization are provided by Marquardt (1994). At Motorola, for example, executives act as instructors. Motorola's COO, William Weisz contends that managers must be visibly involved, as participants or instructors, because their involvement reflects what is truly perceived to be important by employees. At PPG, not only trainers, but also managers are responsible for learning and also do the training delivery. At Xerox, training in problem solving and quality improvement is delivered in "family groups" which consist of a manager and his/her subordinates. The manager is assisted by a professional trainer in the design and delivery of the training. During the training process, the group selects a project for the application of the quality process and tools. Following training, the manager guides the family group in the use of the quality process. The members of the family group, subsequently work with a professional trainer to provide training to their own subordinates. This method of training is referred to a training cascade.

Stata (1989) acknowledges that the best way his organization, Analog Devices, has found to introduce knowledge and modify behavior is by working with small teams that have the power and resources to enact change. The example he presents is quality improvement, which starts with the divisional manager and his or her direct reports. This approach, enables new knowledge to be transformed into action as an integral part of training. He contends that "this approach, in contrast with sending people individually to centralized training programs, highlights the distinction between individual and organizational learning" (p. 70).

The notion that training and education are "powerful tools for transferring knowledge" (p. 88) is also supported by Garvin (1993). But, he states that they must be linked to implementation. Often, he states, trainers assume that trainees will readily apply new knowledge without taking appropriate steps to ensure that the trainees follow through.

In conclusion, it is evident that the notion of managers as trainers may hold promise, particularly as organizations embrace the concept of continuous learning. The cases and examples that have been provided illustrate that, in the rapidly changing global environment where organization-wide learning is an imperative, both managers and trainers have an important role in facilitating continuous learning and its use within the organization.

Implications for Human Resource Development

Watkins (1989) has defined human resource development as "the field of study and practice responsible for the fostering of a long term, work-related learning capacity at the individual, group and organizational levels. As such, it includes, but is not limited to training, career development, and organizational development" (p. 427). This definition, which reflects the vision of the learning organization, seeks to open the traditional paradigm of practice of the field of HRD, beyond the traditional behavioristic view of practice and its reductionist bias.

Watkins and Marsick (1992) (and Marsick and Watkins 1994) assert that their vision of the field is more of a vision than practice because they recognize that HRD is seldom strategically positioned to influence the organization as a whole. However, it is the broader conceptualization of this field as stated in their definition which will enable human resource developers to create this strategic alignment which will expand HRD's role from changing the threshold of skills in the organization to becoming a partners in the transformation of the organization. Having this mindset, they envision that human resource developers will be called upon to function at a more strategic and conceptual level by focusing on embedding continuous learning strategies within the organization and teaching people how to learn from their own experiences. Human resource developers will not entirely abandon their roles as trainers in ensuring that the workforce has the requisite work skills, they will however, "extend their impact in almost exponential fashion by working with all employees to make self-managed learning more effective and by creating ways for people to share what they can learn" (Watkins and Marsick, 1993, p. 21). Additionally, they can also work closely with managers to build a culture which supports learning within the organization. In turn, managers will be challenged to assume new roles such as trainers, coaches and mentors. According to Kanter (1994), "a great way to develop future leaders is to rotate them through training roles and keep them active in teaching others, even while they pursue their other business responsibilities" (p. S42).

The roles of human resource developers and managers in building the learning organization are at a conceptual level. The lack of empirical research supporting these concepts beyond the base of practitioner literature must be addressed through future research efforts. Currently, an empirical research project is being conducted by a research team, which includes the authors, to evaluate the manager as trainer approach within a Fortune 10 company. The purpose of this research is to provide insight into the effectiveness and limitations of this training method. Future research initiatives are needed to provide insight in the following areas: the roles of human resource developers in supporting and complementing the manager as trainer approach, and the use of this training approach in the new global environment.

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Developing Managers for Overseas Assignments in the Pacific Rim: A Study of International HRD Issues in Singapore

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Singapore

The emerging economies in the Asia-Pacific form a major arena of increasing overseas operations. Yet little is known about the international HRD programs and practices employed by companies to develop managers for the Asia-Pacific. This paper examines the training provided by companies in Singapore for their operations in the Asia-Pacific and provides an insight into the companies' training curriculum.

In today's competitive global business environment, international human resource development (HRD) programs are of significant importance for developing corporate managers (Goldstein, 1989). Organizations must start committing a higher proportion or resources behind developing managers and executives as they do training other employees. Although some companies have programs to develop global executives, most of the programs are new, and many are in the planning stage suggesting that management and executive development with a global focus is still rare (Galagan, 1990). At the point where global strategy and human resource management intersect, there is a void of knowledge and practice (Adler, 1986). According to an ILO report, one of the most important areas of research in international management is the identification and development of suitable managers for overseas assignments in different cultural settings. In regard to international HRD, Ronen (1989) concluded that the limited quantity and quality of pertinent literature was the biggest obstacle to pursuing the tasks of identifying the behavioral characteristics, developing the optimal skills and evaluating the HRD techniques for this purpose.

Increased internationalization of economic, political, and social arenas has led to greater interpersonal contact. Because a significant proportion of this contact has not been successful, international HRD, most of which is embodied in cross-cultural training has been proposed by many scholars as a means of facilitating more effective interaction (Harris & Moran, 1987, Black & Mendenhall, 1989, Trompenaars, 1993). International management development programs bring people from different subcultures together and broaden their outlook, thus providing socialization in their managerial subcultures (Hofstede, 1984). Global and cross-cultural training and career-path planning have become necessary for managers in the global corporation, regardless of their domestic or international assignments (Landis & Brislin, 1983).

Organizations find globalization difficult since the international management literature does not provide much guidance so far (Rhinesmith, 1991). Mendenhall and Oddou (1985) concluded that the available knowledge of the cognitive dynamics of international assignees' cross-cultural adaptation process is quite limited. Latham (1988) observed that interest in conducting empirical research on various issues of cross-cultural training has declined in North America since the late 1960s and 1970s. In a review of empirical literature, Black and Mendenhall (1990) examined the effectiveness of cross-cultural training relative to three outcomes: cross-cultural skill development, cross-cultural adjustment, and job performance. The review found that most empirical work was not founded on a theoretical framework. The lack of a theoretical framework has left managers with little means of deciding who would benefit most from the HRD programs, or what training and development method would be most effective, or how to best design such international HRD programs. Three types of training for successful assignment have been prescribed: pre-departure training (Tung, 1987; McEnery & DesHarnais, 1990), post-arrival training(Tung, 1987), and repatriation training (Tung, 1989; Harvey, 1989).

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With the rapid rate of economic growth and opening up of new markets in the Asia Pacific region, a great deal of attention is being focused on the management and HRD programs of large successful companies with cross-border operations in this area. In addition, the recent regionalization thrust of the Singapore government has created substantial awareness among its business organizations of the need to venture overseas. This is especially important as there appears to be a shortage of key management personnel for cross-border assignments within Asia. The growth of the newly emerging economies of China and now, Vietnam and Indonesia, has created excess demand for such professionals. The issues of international HRD are receiving increasing attention among the "emerging multinationals" of this region. But, very little is known about international HRD practices in this region (Osman-Gani, 1995). The purpose of this paper is to present the findings of the authors' study on the relative importance of training on several key factors that are crucial to companies for their managers to succeed in overseas assignments in the Asia Pacific region. In addition to identifying the profiles of international managers, the study also attempts to identify the types, effective methods and duration of such training programs. A comparative analysis was also conducted among the multinational enterprises (MNEs) and the domestic companies to identify the extent of differences in dealing with several key HRD issues.

Methodology

The study was conducted on a selected group of companies identified by the Economic Development Board (EDB) of Singapore on the basis of their overseas business operations. A survey was conducted to collect information from the CEOs/Senior Managers of 288 selected companies representing domestic companies as well as MNEs from various business sectors. A structured questionnaire was developed for the purpose of the study using the conceptual framework and theories of international business and HRD.

The draft questionnaire was pilot tested and validated in terms of content and the format by a panel consisting of faculty members of the School of Accountancy and Business, Nanyang Technological University and senior officials of the EDB, Singapore. The questionnaire was administered using local mailing and facsimile communication system. A total of 203 companies responded to the survey providing an overall response rate of 70.49%. Of all the responses, 139 questionnaires could be used effectively for data analysis. Frequency analyses, cross-tabulations and appropriate summary statistics were used in analyzing the data for this descriptive study.

Findings

Profile of Expatriate Managers. In selecting the expatriate managers, almost half(49.61%) of the companies indicated that gender did not matter, with the remainder indicating a preference for males. About 82% of the companies employed selection criteria that is a combination of experience, education, age, gender, technical knowledge, salary/benefits and language proficiency. Few (15.39%) utilized a sole criterion based on a trait or skill: experience, education, or technical knowledge. The selection criteria would be tempered by the functions the managers are expected to perform overseas, for example, a manager being assigned as a general manager would be expected to possess certain skills and competence . The functions listed by the companies are shown in Table 1 below:

Table 1. Functions to be Performed by Prospective Employees Sent Overseas

Functions	Number of Companies	Percentage of Companies
General Management	79	56.83
Production/Technical	96	69.06
Sales/Marketing	58	41.73
Financial/Accounting	43	30.94

(Some companies responded in more than one functional management areas)

As to the duration of overseas assignment, 61.02% of the companies expect their managers to stay up to two years in their overseas business and the mean duration of overseas assignments was 2.16 years.

Frequency, Duration and Providers of Training Programs. The international training programs were mostly (62.2% of the companies) conducted on an ad-hoc basis, with the rest of the companies who provide training (37.8 %) doing so on the frequencies shown in Figure 1 below.

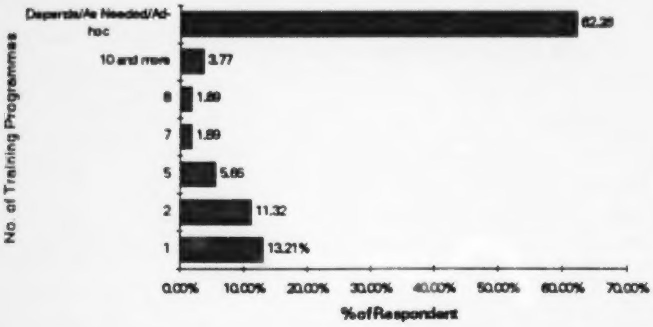

Figure 1. Number of International Training Programmes Conducted in a Year

The average duration of the training programs provided by the companies was varied; a majority (54.35%) had programs of an average duration of one to four weeks per program in a year. However, in response to a question on what should be the reasonable duration of training programs for some areas of management(referred to subsequently in this paper as the list of functional management areas) - general management; human resource; socio-cultural; accounting, finance and tax; production and technology; marketing; legal and environmental issues - the preferred duration of training varied widely with mean hours of 17.05 to 50.92 hours (ranging from 2 to 1000 man-hours per person).

The training programs were provided by external consulting organizations (38.18%) and university or academic institutions (9.09%), with others providing for the training through in-house facilitators (which in the case of MNEs, may be conducted at the headquarters in the home countries).

Types of Training Provided. On the central questions of the study, the training provision and training needs for successful deployment of managers, it was found that a majority of the companies (53.72%) were providing some form of training for overseas assignment; 46.23% did not provide any training. The types of training programs provided are listed in Table 2 below:

Table 2. Types of Training Programs Offered

Type of Training Program	Percentage of Companies
Cross-cultural	16.81
Orientation	37.82
Language	21.00
Family Adjustment	6.72
Others(including on job training, skills and technical training	17.65

The companies were also asked about the relative importance of each of the three types of training to the success of overseas assignment prescribed by the literature - pre-departure, post arrival and repatriation training. The importance attributed to the different types of training is shown in Table 3 below. It would appear from Table 3 that pre-departure training is rated as more important and repatriation training being lesser important.

Table 3. Importance of Different Types of Training Programmes

Training Programmes	Mean*	Standard Deviation	Percentage of Companies
Pre-Departure Training	3.34	0.73	92.08%
Post-Arrival Training	3.06	0.70	91.36%
Repatriation Training	2.26	0.84	87.76%

(* 4 = Most Important and 1 = Least Important)

Specific Training Needs. In ascertaining the training needs of the participating companies, the questionnaire included to determine the importance attributed to the list of functional management areas, the companies rated General Management as the most important area and Socio-cultural Issues was ranked fifth.; the ranking of the rest of the functional management areas is depicted below in Table 4:

Table 4. Ranking of The Functional Management Areas in Terms of Training Needs Importance

Functional Management Areas	Rank	Percentage of Companies
General Management	1	35.2
Human Resource and Labour	2	23.0
Legal and Environmental	3	22.2
Production and Technology	4	16.0
Socio-cultural	5	16.0
Accounting, Finance and Tax	6	16.7
Marketing	7	20.3

Each of the functional management areas were expanded upon with a series of questions that sought insight on the specific aspects of each functional management area deemed important by the companies, who rated them on a 4 point scale. The findings are extremely relevant as they would provide guidance to the HRD professionals in their design of training programs. Further, they would be of use to other companies, who may wish to send employees overseas and wish to prepare training programs, as the responses are from companies, a majority of which have existing experience with overseas assignment. However, for this paper, the authors decided to present the findings on the two top ranked areas, and the two areas that were surprisingly ranked as less important (Socio-cultural Issues and Marketing). The rating of the various aspects of General Management and Human Resource and Labor are shown in Tables 5 and 6; and the rating of the various aspects of Socio-cultural issues and Marketing are shown in Tables 7 and 8.

Table 5. Training Needs Importance: General Management Issues

General Management Issues (Arranged in order of importance)	Mean*	Standard Deviation	Percentage of Companies
Coping with different business philosophies/ practices	3.32	0.70	95.68%
Familiarity with economic system & industry structure	3.21	0.74	96.4%
Familiarity with political system	2.79	0.75	95.68%
Managing geographically dispersed operations	2.77	0.91	92.08%

(* 4 = Most Important and 1 = Least Important)

Table 6. Training Needs Importance: Human Resource and Labor Issues

Human Resource and Labour Issues (Arranged in order of importance)	Mean*	Standard Deviation	Percentage of Companies
Dealing with compensation/remuneration issues	3.15	0.75	94.24
Multicultural team building process	3.06	0.68	93.52
Recruitment and selection procedures	3.05	0.83	94.96
Dealing with disciplinary matters	3.05	0.69	94.96
Reward and recognition system	3.02	0.64	94.24
Employee training & development process overseas	2.99	0.65	94.96
Dealing with unions	2.97	0.81	93.52

(* 4 = Most Important and 1 = Least Important)

It can be seen from Table 5 that in the area of General Management Issues, two aspects rated as important are coping with business philosophies or practices, and familiarity with economic systems and industry structure. In the area of Human Resource and Labor Issues, almost all the aspects were rated as important(See Table 6). Of the Socio-cultural issues(See Table 7), knowledge of business ethics or manners and customs, knowledge of language, and coping with family adjustment issues were rated as more important than others. In the Marketing area(See Table 8), none of the issues were rated more important considering the mean scores.

Table 7. Training Needs Importance: Socio-cultural Issues

Socio-cultural Issues (Arranged in order of importance)	Mean*	Standard Deviation	Percentage of Companies
Knowledge of business ethics/manners & customs	3.45	0.63	95.68
Knowledge of language	3.14	0.68	95.68
Coping with family adjustment issues	3.09	0.83	93.52
Dealing with religious and sensitive ethnic issues	2.95	0.80	94.96
Knowledge of non-verbal communication (body language)	2.66	0.75	95.68
Knowledge of education system	2.37	0.71	94.24

(* 4 = Most Important and 1 = Least Important)

Table 8. Training Needs Importance: Marketing

Marketing Issues (Arranged in order of importance)	Mean*	Standard Deviation	Percentage of Companies
Dealing with tariff and non-tariff barriers	2.92	0.80	90.64
Handling product modification issues for foreign acceptability	2.85	0.76	89.2
Knowledge of marketing research practice & information sources	2.79	0.76	92.08
Dealing with price control policies & cartel situations	2.78	0.84	89.2
Dealing with foreign trade mark & Patent regulations	2.74	0.81	89.92
Dealing with foreign media & advertising regulations	2.47	0.83	91.36

(* 4 = Most Important and 1 = Least Important)

Effective Methods of Training Delivery. In identifying the effective methods of training delivery it was found that lecture or classroom training was the most preferred method of delivery for all the functional management areas. Other preferred methods of training delivery were: workshop/symposia for General Management Issues, Human Resource and Labor, Marketing and Accounting, Finance and Tax; field trips or site visits for Socio-cultural issues and Production and Technology; seminar/conference for Legal and Environmental Issues.

It would appear from Table 9 that where the training involves functional management areas which are less technical in nature, the preferred method of training delivery is the lecture/ classroom teaching. This preference can be seen in the areas of General Management, Accounting, Finance and Tax, and Legal and Environment. The exception appears to be only in the area of Production and Technology where workshops/symposia was the most preferred method which may be explained by the need for interactive discussions on new technology or designs. In areas that involve less technical content such as Socio-cultural and Human Resource and Labor the lecture/classroom method of training delivery was closely followed by others such as field trips, seminars and case study analysis.

Table 9. Effective Training Methods for Each Functional Management Area

Functional Management Areas	Top Three Training Methods	Percentage of Companies
General Management	(1) Lecture/Classroom training	32.4
	(2) Workshops/Symposia	23.0
	(3) Seminar/Conference	19.4
Socio-cultural	(1) Lecture/Classroom training	25.9
	(2) Field trips/site visits	23.7
	(3) Seminar/Conference	17.3
Human Resource and Labour	(1) Lecture/Classroom training	28.8
	(2) Workshops/Symposia	25.9
	(3) Case Study/Analysis	23.7
Accounting, Finance and Tax	(1) Lecture/Classroom training	45.3
	(2) Workshops/Symposia Seminar/Conference	20.9
	(3) Case Study/Analysis	12.9
Production and Technology	(1) Workshops/Symposia	31.7
	(2) Field trips/Site visits	28.8
	(3) Lecture/Classroom training	19.4
Marketing	(1) Seminar/Conference	28.8
	(2) Workshops/Symposia	22.3
	(3) Field trips/Site visits	21.6
Legal and Environmental	(1) Lecture/Classroom training	37.4
	(2) Seminar/Conference	26.6
	(3) Case Study/Analysis Workshops/Symposia	13.7

MNEs versus Local Companies. The authors conducted comparative analyses of the responses of the MNEs and the local companies to ascertain differences, if any, in their training programs and HRD strategies. It was found that there was almost no difference in the rating of pre-departure, post-arrival and repatriation training. The MNEs and local companies both rated repatriation training as less important than pre-departure and post-arrival training. More of the local companies (42.9%), surprisingly rated repatriation training as important (that is 3 and 4 on a four point scale where 4 is most important) than the MNEs (34.8%). Through a comparative analysis of the companies' assessment of the importance of various functional management areas, it was found that the MNEs attached higher importance to Socio-cultural Issues. About 43% of the MNEs ranked it among the top three most important areas whilst only 29.4 % of the local companies ranked it among the top three. When the various aspects of the functional management areas were examined, it was found that the local companies did not rate the aspects very differently from the MNEs. However, in some of the functional management areas a larger proportion of the local companies rated a few aspects as more important (rating them at 3 or 4 on a scale where 4 is the most important and 1 the least important) than the MNEs. For example, in the area of Production and Technology Issues, 89.2% of the local companies rated dealing with local suppliers and purchasing requirements as important compared to 75.6 % of the MNEs; 91.9 % of the local companies rated general knowledge of logistic systems as important compared to 73.4 % of the MNEs. In Marketing, 72.2% of the local companies attached importance to dealing with price control policies and cartel situations compared to 54.5% of the MNEs. Almost 92% of the local companies also rated knowledge of the general legal framework and company laws of the host country (in the area of Legal and Environmental Factors) as important compared to 79% of the MNEs.

Discussion and Implications

Since most of the responding companies possess experience with overseas operations and, hence, able to provide effective judgments on the importance of various training needs and issues, the findings are relevant and useful for the formulation of international HRD strategies for expatriate managers. The finding that the expected profile of the prospective expatriate is only marginally inclined towards males with the rest being neutral about either gender is interesting. In a society labeled as Confucianist (Bond & Hofstede, 1989), a preference for males would have been expected as an overwhelming response. Furthermore, it would appear to differ from the experience in MNEs where the preference is for male expatriates despite the rapid increase in the number of female managers, women have made little headway in getting foreign assignments (Taoka and Beeman, 1991). Many women were turned down during the selection process for overseas assignments (Solomon, 1989). The reason generally given is the difficulty of acceptance by host country locals as a result of sex discrimination or sexist attitudes (Izaeli, et al, 1980). The finding that most of the companies provided training on an ad hoc basis is no surprise as the timing of overseas operations and the deployment of employees for overseas assignments, often make it convenient to stage training on a need basis.

It would appear from the study that the companies are using the managers for the three main reasons (often cited for using expatriate managers), namely, technical competence, management development and control (Daniels & Radebaugh, 1992). However, the training content (Tables 5 to 8 above) and the importance attached to pre-departure and post arrival training suggests that the key roles intended for the overseas assignees are technical competence and control.

The lower importance attached to repatriation training by both local companies as well as the MNEs operating from out of Singapore is surprising. This lower importance attached to repatriation may be indicative of a prevalent attitude among the companies, deeming the employees as important for the tasks assigned - specific overseas operations - and not considering their long term careers. In human resource development terms, this, if it is the case, is short-sighted as the training and development of human resources are crucial to companies and the contributions of the managers have potential beyond the overseas assignment. An alternative explanation is that the experience of the companies with repatriation has been favorable without any high turnover of employees upon their return. However, it is also plausible that since the companies are likely to be deploying Singapore nationals, there is less of a difficulty in re-adjusting to the Singapore environment as there are cultural similarities between Singapore and the countries of the region. A larger percentage of the local companies did rate repatriation training as important compared to the MNEs. The difference in the rating by the MNEs and the local companies could possibly be explained by the longer experience and tradition for overseas assignment among MNEs as compared to the local companies.

In their rating of the various aspects of the functional management areas, the choices made by the companies are consistent with the role the managers are expected to play in controlling operations in the recently opened and transitional economies in Asia. In the area of general management, coping with different business philosophies or practices and familiarity with economic system and industry structure are considered more important. Of the human resource and labor issues, the four most highly rated aspects are also consistent with the need to train the team that will run operations and at the same time consider the recruitment of host country staff (and the aspect of disciplinary matters can be of specific importance especially where corruption is rife or where countries are emerging from centrally planned economies, e.g. China where supervisors can find it difficult to discipline employees used to lower productive work methods).

It does appear contrary to expectations that marketing is not considered as important when compared with the other areas. Of the specific aspects of marketing (See Table 8), only the aspect of dealing with tariff and non-tariff barriers was rated being relatively important.

Although it would be plausible to conjecture that since a majority of companies are in manufacturing, marketing is less important as the companies may be establishing overseas operations to capitalize on cheaper labor and other resources, it is only possible to conclude that training in marketing skills may not be as important as other areas of training for overseas assignments. Perhaps the market conditions are such that no specialized marketing skills are required to sell the products and services, and that the companies are now enjoying conditions of a "sellers" market in the region.

Two observations are necessary about the low ranking of socio-cultural issues. This area was ranked fifth among the functional management areas, and amongst the list of issues, coping with family adjustment issues was rated the third most important. This low assessment of the issue is consistent with the early finding that only 6.72% of the training programs were on family adjustment. It would appear that a majority of the companies do not as yet realize what has been identified as a key reason for failure of overseas assignment - the family (Black & Gregerson, 1991). Secondly, the companies appear to be less concerned about equipping the expatriates for the impact of unfamiliar culture, and more concerned about the ability to adjust to a different business environment. Yet the manager's ability to adapt to a different physical and cultural environment is cited as the second important reason for expatriate failure (Tung, 1987).

On the comparative analyses, it must be noted that there were very few differences in the responses of the MNEs and the local companies, except for those differences highlighted earlier. The authors had expected that owing to the recent involvement of the local companies in overseas ventures, there would be disparities in the responses. However, this similarity in responses may be explained by the demographics of the respondents - 78.4% of the respondent companies have overseas operations (most of them are emerging MNEs); 42.57% of the respondent companies have established overseas business operations for five or more years; although 21.6% of the respondent companies did not have overseas operations, 65.52% of these companies have high intention to venture overseas.

Conclusion

Results from this study provide first hand knowledge about training needs of managers in the Asia Pacific region on the various functional management areas for their success in overseas business. This knowledge would help HRD professionals in formulating international HRD strategies in terms of planning, designing and delivering effective HRD (training) programs for managers to be sent on overseas assignments. This study has also succeeded in providing insights of the current HRD strategies and practices of the companies operating out of Singapore for their expatriates in the Asia-Pacific. It would appear that the companies are applying HRD strategies that are determined by a number of factors: the intended role to be performed by the employee, the host country conditions, the existing experience, knowledge and skills of the selected employee, and the knowledge and experience of the companies themselves in expatriation. The training programs that are ultimately designed for overseas assignments are thus an outcome of the importance attached to these factors and the perceptions within the companies. A company, for instance deploying expatriates for the first time, without experience of expatriation, and having a priority on the success of the overseas operations would attach greater importance on the intended role of the selected employee and, after considering the existing skills of the selected employee, place the priority of its training on technical skills and knowledge to equip the employee for the intended role in the host country. Another company for whom the individual, his family, and the host country conditions are deemed important might provide cross-cultural training and site visits. From the companies' responses to the question of the relative importance of different types of training, it is fairly clear that the companies' knowledge and experience of expatriation are an important determinant at present as the lack of experience with returning expatriates may be the reason for less emphasis on repatriation training and for training in socio-cultural issues and family adjustment. A diagrammatic presentation of a conceptual framework incorporating these factors is shown in Figure 2 below:

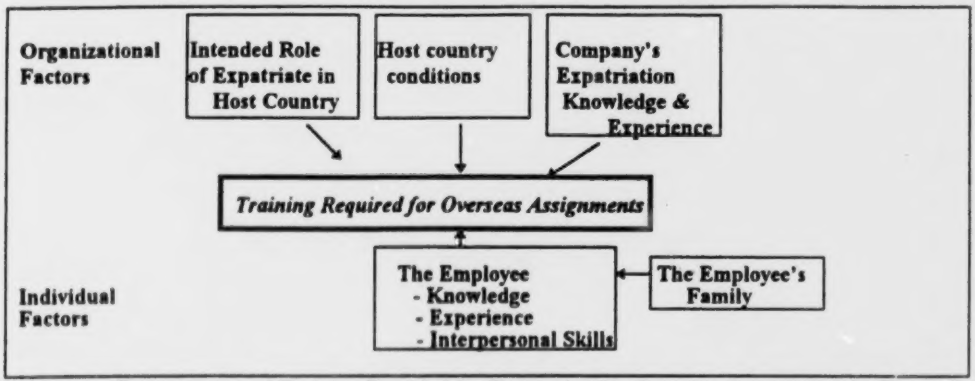

Figure 2. Determinants of Training Provided by Companies for Overseas Assignments In The Asia Pacific

The focus of this study has been on training. There are a number of factors that make for the successful acclimatization of expatriates to their host countries - training is but one. There has been suggestions that the spouse should be included in the training programs specific to orientation (Black & Gregerson, 1991). Another crucial factor, is the individual. In this respect, the selection criteria may include psychological testing to assess the adaptability of the employee; this would screen out the non-adjusters.

However, successful acclimatization of employees is of only immediate concern to the company. The success of any global company requires not just successful acclimatization but also successful expatriation, which is defined to include the repatriation and continued employment of the overseas managers in the organization. Successful expatriation of managers is essential to the international HRD process, which is required for the continued success of companies operating in the global arena. The training programs provided by companies for overseas assignment is one component of successful expatriation. Apart from training, the HRD practices and policies of the companies in general would have an effect, if, for example, there is an understanding among the employees that overseas assignment is a likely essential aspect of their career development. The organizational culture of the company would have an effect on expatriation, too. The individual manager would again feature as a factor but the scope extends beyond the individual's ability to adapt to an overseas adjustment and encompasses the psychological make-up, objectives, skills and attributes. This factor could be described as the 'black box" of the individual. Further research would be necessary to examine the workings of a model that incorporates these factors: the individual, the organization's existing HRD practices, training for the overseas assignment of the expatriate and spouse. Based on the findings of this study and the review of the literature, a conceptual model is proposed in the following form:

S = f (T, E, I, F) .... (1)

Where S = Successful Expatriation, which is defined to include successful assignment aboard, and subsequent repatriation and continued employment in the company.

*T = Training for Overseas Assignments

E = Existing HRD practices and policies of the company, which is defined to include the career development policies and present organizational culture of the company.

I = the Individual manager who has the required psycho-social make-up, ability to adapt to different cultures, interpersonal skills and other attributes.

F = the Manager's Family

***T = f (PD, PA, RT)** .... (2)

Where

PD = Pre-departure training

PA = Post-arrival training

RT = Repatriation training

The authors intend to extend the scope of this study further into the neighboring Asian countries in order to examine the elements of the proposed models through the replication of this type of international HRD study. This might lead to the development of a general framework of international HRD strategy for the Asia Pacific region in future. International HRD is an emerging field where future research on various organizational issues is in high demand. As McLean(1991) mentioned, "the field is ripe, and ready to harvest." Attempts should be made in developing comprehensive theoretical models of international HRD by integrating knowledge from relevant disciplines as well as by synthesizing the empirical findings from HRD studies conducted (or to be conducted) at different national/cultural settings of the world.

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Russia and China in Transition: Implications for Human Resource Development (HRD)

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The transition of Russia and China from a centralized economy to a market economy is examined against the background of prior approaches to adult education and training. Russia's revolutionary change with the rejection of Communism, and China's developmental change through a socialist market economy, have different implications for human resource development. In both cases, the crucial element is the incorporation of the special strengths of each culture, as opposed to wholesale adoption of western practices.

> Cultural problems cannot be solved as quickly as political and military problems. It must be understood that conditions for further progress are no longer what they were. In a period of acute crisis, it is possible to achieve a political victory in war in a few months. But it is impossible to achieve a cultural victory in such a short time. By its very nature, it requires a longer period; and we must adapt ourselves to this longer period, plan our work accordingly, and display the maximum of perseverance, persistence, and method. (V.I. Lenin, Bulletin of the Second All-Russia Congress of Political Education Departments No. 2, 19 October 1921)

In 1917, Lenin anticipated that the successful Bolshevik revolution, which began in Petrograd, was but a harbinger of the future proletarian-socialist world revolution. Some sixty years later, Lenin's world revolution appeared remarkably efficacious. The Union of Soviet Socialist Republics, long with the People's Republic of China, was foremost among many nations governed by an uncontested Communist Party; many other nations governed by multi-party parliaments had significant participation by Communist parties. Lenin foresaw that his various successors might need many decades before the worldwide cultural revolution they sought would become a reality--namely, the abolition of bourgeois culture and values (Lenin, 1920).

Now, more than seventy-five years later, a world economic and cultural revolution is indeed underway, but certainly not the one that Lenin envisioned. As we are all aware, it was the Soviet Union--not capitalism--that was abolished. Parliamentary democracies not only arose in Communist Party-led nations, but often outlawed Communist institutions as their first act. A Communist Party still rules China, but neither Lenin nor Mao would recognize how supposedly proletarian-socialist governments could so vigorously encourage private enterprise. Although they could not have predicted such outcomes for their nations, both Lenin and Mao could tell the leaders of the new global economy that revolutions, especially as they require changes in a people's cultural experience and values, are neither easy nor quick to succeed.

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The Turbulent 21st Century

The new and different type of changes affecting corporations and governments today will continue into the next century. In the past, Western corporations relied primarily on implementing innovations on the basis of past experiences and/or trial and error. Successful practices were retained and modified. This approach to corporate leadership emphasized continuity and served market-driven economies. Today an economic revolution is occurring. Drucker (1993) predicted that economic relations will be established among trading nations. Through alliances, companies will become part of a world economy; there will be a radical re-structuring of companies; the current governance of companies will continue to be a problem, e.g. takeovers, employee ownership; and, finally, there will be rapid changes in international policies and politics. This later change is significant with respect to this article, because the Western nations have not fully dealt with the enormous changes in Russia and China as each moves toward a market economy.

Russia

The transition from a centralized economy to a market economy is not an easy one for workers in state enterprises to understand. In the former Soviet enterprise, organizational thinking began and ended with the collective, which was a social and ideological, as well as a structural concept. Lenin's early idealism and his vision of collective decision-making became distorted. Vlachoutsicos and Lawrence (1990) described the abuses thus:

> Lenin believed democratic centralism would promote the public interest by institutionalizing both central direction of the economy and local control over local management and conditions. Before perestroika, however, the gap between practice and policy was enormous; the democracy in democratic centralism had virtually disappeared. In fact, abuses of power were so wide spread that the public came to associate democratic socialism with Stalinism. A fundamental aim of perestroika is to restore to Soviet enterprises the latent energy of grass-roots participation. (p. 58)

This hither to neglected potential of the worker brigade and its promise for empowerment was one of the needs voiced by Soviet managers in a human resource development (HRD) seminar for Russian managers that was conducted in Leningrad by Niemi in 1990. Using Miller's "force field analysis" (1967), the group of managers articulated the forces that would facilitate change and the forces that would impede change. The former included a high level of education among workers, their desire for learning and development, and their desire for participative decision-making. The latter included the abuses of power in a centralized system, lack of encouragement for worker initiative, and a system indifferent to change. This intelligent group of top managers, a high percentage of whom had been engineers, was able to discern the potential conflicts, as well as deep-seated belief contradictions inherent in centralized control that prevented the socialist system from achieving its true potential. Although the managers knew little about the concept of HRD, there was a general belief that Rothwell's (1985) definition was particularly useful to them in making the transition to a market economy. His HRD definition was compatible with the managers' ideas concerning the transition. He defined HRD as

> any planned training, educational, or developmental activity sponsored by a work organization....It connotates the humanistic philosophy aimed at integrating the goals and mission of an organization and the personal need and career aspirations of each individual in that organization for the purposes of increasing work productivity and improving job satisfaction. (p. 15)

The managers further recognized that the change to a market economy would call for organization development, which would require HRD programs that could empower workers to become involved in participative decision-making and workplace learning. The implications of such actions would be line with current Western thinking about creating learning organizations. Senge (1990) described them thus:

> organizations where people continually expand their capacity to create results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together. (p. 3)

Adult Education in Russia

A major challenge after the 1917 revolution was the elimination of illiteracy. Onushkin and Tonkonogaya (1984) reported that, by 1970, the population between the ages of 9 and 49 exhibited 99% literacy. Opportunities for adult education were available to Russian workers through formal education (e.g. evening secondary schools, vocational schools, correspondence study in higher education institutes, and post-graduate education in institutes or higher education departments). In addition, a significant system of non-formal adult education was available to Russian citizens. The two most active non-governmental organizations were the Znanie Society and the people's universities. The programs of the Znanie Society were short-term, whereas the people's universities programs were long-term.

The Znanie Society programs often had two facets: the development of the Soviet personality and the dissemination of ideological and scientific knowledge. However, the role of the Znanie Society changed, as Fishevski (1989) reported:

> re-thinking of approaches to activities of the Society....to assist in the carrying out of a course of action to accelerate the socio-economic development of the country, the revolutionary reconstruction (Perestroika) of all spheres of life in Soviet society, and the affirmation in our country of an atmosphere of openness (Glasnost). (p. 16)

The goals of the people's universities were to organize longer term programs from 6 months to 4 years for middle-class and lower-class adults. Initially responding to cultural and general educational themes, these decentralized people's universities were expanded to include the "raising of professional qualifications and job retraining...." (Lee, 1986, pp. 346-347).

The success of both the formal and informal educational institutions has been judged by the high degree of participation. Hence, these systems should retained to meet the needs of Russian citizens as they move in the direction of a market economy.

Workplace Training

Although workplace training had been a part of formal vocational-technical education in Russia since the 1860s, a nationwide approach to vocational preparation was deemed necessary to achieve the Soviet government's goals for the development of industry in the 1930s. Secondary and post-secondary level training schools were established within the various state enterprises to provide both education and on-the-job experience. However, the events of World War II and the Cold War created an ever greater demand for a technically proficient workforce. Additional professional schools, many unconnected with a particular enterprise, were founded in the post-war period. Although enrollment in postsecondary vocational-technical education continued to rise, Russia's primary resource for training highly skilled workers remained the technical and pre-professional secondary schools (Wolansky & Bax, 1990).

The recent political and economic transitions occurring in Russia have highlighted the need to keep pace with rapid developments in technology, if the Russian workforce is to participate successfully in the world marketplace. Students qualified for admission to higher education in Russia enter universities, polytechnics, or special educational institutes. Those who seek higher education in the polytechnics receive excellent preparation for future careers in technical and engineering fields.

On the other hand, workers seldom pursue higher education; yet their need for continuing technical training increases in urgency with every technological advance. To this end, there is renewed interest in developing institutions and programs to provide vocational and technical education at the postsecondary level. In America, such programs are embedded in the HRD component of an organization or corporation.

Management Training

While the Soviet Union was still a political entity, centers that specialized in management training were established as a part of a series of initiatives labeled by the term perestroika. One such center, the Higher Commercial Management School of Moscow, conducted research beginning in 1989 to identify the values that constituted the culture of Russian management. In this study, Bollinger (1994) attempted to identify predominant cultural values. One important value is high power distance, or the perception that there is great inequality between an executive and subordinate in terms of power. Of the managers who were interviewed, 64% described their direct superiors as either paternalistic or autocratic. The implications for HRD training of managers is the need for managers to accept the concept of risk as they assume the responsibilities of developing products, workers, and markets in a market economy.

Another study by Holt, Ralston, and Terpstra (1994) stated that Russian managers conceptualize terms such as "self-direction" differently than their counterparts in the West, and that they place high value on peer group camaraderie and social conformance. This finding suggests that, in Russia, the HRD training of managers maybe sufficiently different. It may require the development of Russian management strategies and behavioral expectations that reflect Russian culture.

China

Whereas the Russian approach to its movement into a market economy is revolutionary because of the plan to change the system, the Chinese have taken a developmental approach by creating a socialist market economy, while retaining their Communist ideology. However, they, too, have decentralized their operations and abandoned the concept of state-enterprise-worker in favor of the concept of worker-enterprise-state.

In June, 1992, Niemi conducted the first HRD seminars in China in Chuansha County and Shanghai. At these seminars, and during his visit to the Shanghai No. 1 Iron and Steel Company, he was told that the format of training programs had been highly structured, with its goals as the acquisition of content, or knowledge, for a current or future job. Today, the cadre (leader) is responsible for a new HRD role. These cadres told him that the new policy being formed at the national level encouraged new and bold experimentation. In fact, these very words--"bold experimentation"--appeared in Li Peng's address at the Seventh people's Congress on March 20, 1992. The purpose, he said, was to

> acquire new skill through practice and to break new paths...we should review our experience frequently, continue with methods that have proved effective, correcting ones that have proved otherwise, and solving new problems as soon as they are discovered in practice. In all our work and study, we should stress practical results and create solutions, guarding against formalism and bureaucratism. (p. v)

The extension of HRD responsibilities to the enterprise has created profound changes in the preparation and development of workers in the enterprise. Instead of conforming to a training curriculum established by Beijing, enterprises are beginning to design their own programs based on their particular needs.

Adult Education in China

The development of adult education in Communist China can be divided into four periods. Maorong (1988) described the first three periods as the developing period, the stagnating period, and the redevelopment period. In the first period (1949 to 1966), he reported that the illiteracy rate had dropped from 80 to 43 percent. The second period (1966 to 1977) was also known as the great Cultural Revolution--a time when adult education came to a stand still. In the third period (1977 to 1992), massive development of adult education occurred in the form of adult higher education institutions, secondary technical schools, staff-worker schools, and county-wide peasant technical schools. With increased emphasis on economic development, the need for a variety of qualified adults emerged. Any discussion of education in China must include a recognition of the magnitude of the population involved. Sredl noted in 1982, that

> each year, anywhere from 7 to 10 million students graduated from China's middle schools [equivalent to Western secondary schooling]. Millions more leave school without graduating. Only about 4 to 6 percent of the graduate students pursue further study at colleges and universities [including polytechnics]; another 2 percent have had some vocational or technical training. Thus over 90 percent of China's young people are untrained for any kind of skilled work and must be absorbed annually by a labor force already overburdened with unskilled workers. (p. 9)

Adult education was seen as a second system that raised the educational level of workers. To meet these enormous demands, China has developed 1,325 adult education institutions, including 835 workers and staff colleges, 265 teachers colleges, 172 cadre colleges, 5 farmers colleges, 4 correspondence colleges, and 44 radio and television broadcast universities. (Zhao, 1992) In effect, adult education was supplemental to basic, technical, and general higher education--a system that developed future workers. Adult education included correspondence study in higher education, TV broadcasting, evening colleges and self-study adult education.

The Bureau for Worker-Peasant Education is nominally responsible for adult education throughout China; but, in fact, the range of adult education delivery involves a vast array of the nation's resources. One such resource is the Central Television and Broadcasting University that is responsible for educational programming. Certificate granting equivalency programs are available for the primary, middle (secondary), and university levels. The regular school system provides these programs through spare-time, evening, and correspondence study. Local governments, industrial enterprises, and communes also offer such programs through spare-time study. Mass organizations such as the All China Federation of Workers, the National Federation of Women, and the Communist Youth League also support adult education, either through their own programs or through auxiliary support to constituents participating in other programs (Colletta, 1982).

During Niemi's 1992 visit to the Baoshan Iron and Steel Complex, self-directed learning was praised for its role in the continuing education of HRD personnel.

In the fourth period (the present experimentational period), profound changes have taken place at Shanghai No. 1 Iron and Steel. Niemi (1992) reported that

> the HRD program had changed from a highly centralized content-centered format that workers found to have limited application to their jobs to one in which workers are involved in all aspects of the program. The videotape [that he] viewed there illustrated the value of collaborative planning, focusing on problems or individual needs....the importance of the individual in the collective was receiving recognition. (p. 117)

Management Training

The foundation of management training in Communist China had its beginning with the preparation of the cadre (leader) for the peasant army to fight the Japanese and, later, in the Liberation War. Jixiang and Maoshenge (1988) defined "cadre" as follows:

> ...administrative or managerial personnel, as well as other professionals and technical personnel, who maintain the status civic servants within...working bodies...and public or government organizations at alllevels above villages and town or subdistrict in the cities. (p. 45)

Cadre education became an established system to train leaders for the government and party.

With the opening of trade with the West in 1978, came the need for a new cadre of entrepreneurial leaders. They are gaining knowledge and experience through the joint ventures funded by huge investments from other countries.

Implications for HRD in Russia and China

Russia's rejection of Communism and centralized planning in favor of a market economy has important implications for HRD. In its haste to develop Western practices, there is a danger that important cultural elements of the previous system might be lost. One is the concept of the collective, with its emphasis on the individual as a member of a team. This approach contrasts sharply with the highly individualized Western approach that fosters competition and seeks individual rewards. The second element is the present of many highly educated people in the workforce. A major problem that stems from the long history of Communist practices is a low level of worker initiative and motivation due to centralized control. This condition is unfavorable to the development of an entrepreneurial system.

The implications for HRD are that these cultural elements must be preserved and incorporated into specially designed programs for workers moving into a market economy. It would be unwise to borrow, uncritically, other models including Western capitalism.

China's retention of the Communist system, while creating a socialist market economy, has quite different implications for HRD. This developmental approach allows for gradual change. Whereas the Chinese have a much lower level of education than the Russians, they have long experience with the cadre system that trains leaders. Also, the Chinese are gaining considerable technical expertise through the contacts with experts in joint ventures involving other countries. The Chinese government now recognizes the importance of HRD in an enterprise, as a process that would involve workers in new learning.

As both Russia and China undergo the transition to a market economy, HRD offers a fresh approach to learning for both managers and workers in enterprises. In developing HRD programs, however, a crucial element is the incorporation of the special strengths of each culture, as opposed to the wholesale adoption of modes or models from Western or other sources.

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Relationships between Organizational Climate and HRD Practices: A Comparative Study of American and Chinese Firms in Taiwan

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HRD receives much more attention in Taiwan in recent years. Either American or Chinese companies in Taiwan put much efforts to the field. Organizational climate is believed playing an important role with HRD practices. This study examines the differences in organizational climate and HRD practices in American and Chinese firms in Taiwan. The relationship between organizational climate and HRD practices also be explored.

One of the most important assets in a company - its human resources, has been receiving much attention in recent years. Human resource development, or how to optimize such resources in the organization, has consequently become an ever more important topic worldwide. HRD is a comparatively new field of study in Asia in Taiwan. It is just beginning to rise to the status of a professional field. The purpose of this study is to examine the relationships of organizational climate and human resource development practices in the context of American and Chinese firms in Taiwan.

Statement of Problem

Taiwan has changed from a developing country to a developed country. As a consequence, human resource development receives much attention in Taiwan (Chen, 1987). Human resource development is treated not only as an important organizational function, but also as a critical function to be performed in order to achieve success in a global economy. Organizational climate, on the other hand, is believed to play an important role in the field of human resource development (Kopelman, Brief & Guzzo, 1990; Lin, 1991). Many studies show that the organizational climate has positive effects on human resource management practices, which can bring about productivity gains (Dastmalchian, 1986; Pfluger, 1988). Researchers (Katz and Kahn, 1978; Mink, Owen, Mink, 1991, 1993; Morgan, 1986) also give credit to the open organization. One area that has not received much attention in the literature is the relationships between the organizational climate and HRD practices. Since organizational climates are culture-related, different organizational climates might affect HRD practices differently in different cultures. As yet there has been no research that has been done concerning differences in the relationships between the organizational climate and HRD practices between American and Chinese firms.

Significance of Study

Results may add to the current body of knowledge in the field of cross-cultural comparative studies in Asia. From an organizational perspective, the results may also provide new information on reviewing organizational climates, thus helping to achieve improvements in the breadth and depth of HRD practices.

Research Questions

This study assesses the organizational climate as perceived by employees at the management and non-management levels and human resource development practices in the context of American and Chinese firms in Taiwan. In this study, the organizational climate is measured on Likert's

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(1961) theory of System 1, 2, 3, 4 -- namely exploitive authoritative, benevolent authoritative, consultative, and participative organizational systems; it is based on his Profile of Organizational Characteristics (1977).

HRD practices is based on Lippitt's (1982) Human Resource Development Assessment Inventory (HRDAI). 13 criterion are included. They are relevant needs, clear objectives, accomplishment, uniqueness, flexibility, skill oriented, professional leadership, future perspective, value system, evaluation, information system, organizational support, and participant commitment.

The key research questions to be answered are:

1. Is organizational climate, as measured by the Profile of Organizational Characteristics, significantly different between Chinese and American firms in Taiwan?
2. Are the HRD practices, as measured by the HRD practices questionnaire (based on HRD Assessment Inventory), significantly different between Chinese and American firms in Taiwan?
3. Are there any correlation between organizational climate and HRD practices?

Methodology

This section describes research method. Subjects, instruments and pilot testing are discussed in the followings.

Subjects. A major weakness that has been criticized in many cross-cultural studies is the failure to control organizational size, technology and type of industry (Negandhi, 1975; Adler, 1983). A high percentage of the American firms in Taiwan are in the electronic and service industries. Therefore, to avoid the above mentioned weakness in this study, the sample will concentrate on American and Chinese firms in three industries: high-tech, insurance and banking.

For the purposes of comparison between two types of firms, the following criteria are employed to select target firms for this study.

1. The total population includes any firm that employed more than 300 people in 1993.
2. The American target firms were selected from the American Firms in Taiwan. Similarly sized Chinese firms in comparable industries were selected from the List of the Top 500 Corporations and Top 100 Corporations in Service Industry published by Taiwan's "Common Wealth" magazine in June 1994.
3. 15 American firms and 20 Chinese firms were selected at random using the above criteria.

As described in the previous section, only certain industries were selected as the subjects for this study. The industries chosen in the research were the:

1. High-tech industry, including electronics, communication, and information industries.
2. Service industry, including bank and insurance industries.

A total of 25 companies, 15 Chinese companies and 10 American companies, were finally selected with the criteria described above. Table 1 is the distribution of the companies in different industries. 40 copies of the organizational climate questionnaire were distributed to management and non-management-level employees in each selected company. The HRD practices questionnaire was answered by the HR staffs in the selected companies.

Table 1. Distribution of the Subjects

	Industry Type				
Company Type	High-tech	Bank	Insurance	Others	Total
American firms	6	1	2	1	10
Chinese firms	10	3	2	-	15
Total	16	4	4	1	25

Instruments. Two questionnaires are used in the study to determine organizational climate and HRD practices in the organizations. The Organizational Climate questionnaire is based on Likert's (1977) Profile of Organizational Characteristics. The HRD practices questionnaire is based on Lippitt's (1982) Human Resource Development Assessment Inventory.

The above instruments are in English, and only POC has been translated into Chinese. The Human Resource Development Assessment Inventory is first translated by the author, who is of Chinese origin. Then two translations from Chinese to English, are carried out independently by two people; a bilingual Ph.D. candidate, and an American who is fluent in Chinese. The Chinese version of the measurements are inspected in the confirmation and pilot testing process.

Pilot testing. A pilot study was conducted in Taiwan in February 1994. Six people were interviewed by the author. The six people included two scholars, two management level and two non-management level employees in different organizations. The six people were asked to review and answer the organizational climate questionnaire and review the HRD questionnaire. Three main questions were asked:

1. Whether the translation of the questionnaires is adequate and understandable.
2. Whether the questionnaire items are suitable for use in Taiwan? Are there any questions which should be deleted, added or modified.
3. Whether there are enough significant differences between the answers likely to be given by American and Chinese companies, respectively, in Taiwan.

Two questions related to control function were deleted from the organizational climate questionnaire after reviewing the comments of the interviewees in the pilot study. Most of the interviewees were doubtful if all the members in organizations would have a chance to know about the control function of the organizations.

Results

A total of 1000 Organizational Climate Questionnaires and 25 HRD Practices Questionnaire were distributed and collected during the period of June through August 1994 in Taiwan. There were 669 returned Organizational Climate Questionnaires and 25 returned HRD Practices Questionnaires. After excluding incomplete questionnaires, the response rate of the Organizational Climate Questionnaire was 66.0%. Among the 660 copies, 45.3 percent were male and 54.7 percent were female. Most of the respondents fell into the age group of 22-30 (46.8 percent) and 31-40 (44.2%). 61.6 percent of the respondents got the bachelor or higher degree(s). The years of service was broken into six groups. Among the six groups, year 1-3 (37.3%) and year 4-6 (26.5%) proved to be the most populous groups. Positions were broken into four groups: high-management level, middle-management level, low-management level and non-management level. 68.6 percent of the respondents were belonging to the non-management level. All the following results are thus based on the information given in the 660 questionnaires that were complete.

The ANOVA test was then applied to the data to test whether there are significant differences in the organizational climate (based on POC, including leadership, motivation, communication, decision-making and goal-setting) between American and Chinese firms in Taiwan. Table 2 shows the means, standard deviation of the scores of organizational climate questionnaire in the two types of companies. The organizational climate scores in American firms is 5.0265, which fell into System 3 (consultative organizational system). The organizational climate scores in Chinese firms is 4.5758, which fell into System 2 (benevolent authoritative organizational systems). Table 3 shows the level of significance was found to be at the .0000 level, with $F(1, 601) = 26.7638$, $p<.0000$ exceeding the necessary .05 criteria. Therefore, the null hypothesis of research question 1 that there is no significant difference in the organizational climate between American and Chinese firms in Taiwan - is rejected. The scores of organizational climate questionnaire in American firms are significant higher than those in Chinese firms. Based on Likert's model, the organizational climate in the American firms is much more open than that in Chinese firms in Taiwan.

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Table 2. Description of Sub populations - Scores of Organizational Climate and Company Type

	Mean	Std Dev	Sum of Sq	Cases
Chinese company	4.5758	1.0295	398.5388	377
American company	5.0265	1.0460	246.1570	226
Within Groups Total	4.7447	1.0357	644.6958	603

Total Cases = 660 Missing Cases = 57

Table 3. Results of Analysis of Variance in Company Type and Organizational Climate

Source	Sum of Squares	d.f.	Mean Square	F	Sig.
Between Groups	28.7096	1	28.7096	26.7638	.0000
Within Groups	644.6958	601	1.0727		

Table 4. Description of Sub populations - Scores of HRD Practices and Company Type

	Mean	Std Dev	Cases
For Entire Population	51.3200	6.4402	25
Chinese company	48.7333	6.4859	15
American company	55.2000	4.1580	10

Table 5. Results of Analysis of Variance in Company Type and HRD Practices

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	1	250.9067	250.9067	7.7510	. 0105
Within Groups	23	744.5333	32.3710		
Total	24	995.4400			

Another ANOVA test was performed on the data to test whether there are significant differences in the HRD practices (based on HRDAI, including relevant needs, clear objectives, accomplishment, uniqueness, flexibility, skill oriented, professional leadership, future perspective, evaluation, information system, organizational support, and participant commitment) between American and Chinese firms in Taiwan. Table 4 shows the means and standard deviation of the scores of HRD practices questionnaire in the two types of companies. The results show that the mean of HRD practices in American firms is 55.2000; and the mean of HRD practices in Chinese firms is 48.7333. Table 5 shows that the level of significance was found to be at the .0105 level, with F(1, 25) = 7.7510. Therefore, the null hypothesis of research question 2 that there is no significant difference in the HRD practices between American and Chinese firms in Taiwan - is rejected. The scores of HRD practices questionnaire in American firms are higher than those in Chinese firms. Based on Lippitt's model, the HRD practices in American firms are better than those in Chinese firms in Taiwan.

To examine whether there are relationships between the organizational climate and HRD practices, a Pearson correlation coefficient test was conducted. The results show that a positive relationship exists between the two variables (Table 6). That is, the higher the organizational climate scores are (toward to System 4), the higher the HRD practices scores will be. Observe also that p= 0.4693, which means that these two variables have a moderate coefficient of correlation.

Table 6. Relationship between Organizational Climate and HRD Practices

	Cases	Mean	Std Dev
Score of HRD practices	25	51.3200	6.4402
Score of Organizational climate	25	4.7369	.4351

-- Correlation Coefficients --

	HRD Practices	Organizational Climate
HRD Practices	1.0000 (25) P= .	.4693 (25) P= .018
Organizational Cliamte	.4693 (25) P= .018	1.0000 (25) P= .

Summary and Conclusions

The findings of the study indicate that the organizational climates and HRD practices in American firms and Chinese firms in Taiwan are different. A positive relationship, and moderate correlation coefficient were also found between the two variables. Am implication may be made from the above results: although organizational climates may differ in accordance with different cultures, open and participative organizational climates might benefit the development of HRD practices, in any culture.

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Decoding Cultural Knowledge: Cross-Cultural Implications for Performance Analysis

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Performance analysis is often complex and contradictory because of differences in cultural frames that shape performance expectations. The problem of conflicting cultural systems is enlarged when organizations cross boundaries and must consider the cross cultural implications of performance policies. This paper uses Sackman's (1991) cultural knowledge frame to organize a review of representative research. Comparative differences in work definitions and rules theoretically support variance in how organizational meaning and behavior are culturally linked.

International businesses clearly illustrate the cultural complexity of performance analysis as organizations cross national borders and face the differing performance perspectives of people in other countries and from other countries.

An anthropological look at the question suggests variance in how people reason about performance expectations. Reasoning patterns originate from definitions of work goals, processes and relationships. The cultural study of how people reason looks at how classifications are formed, what kind of strategies are used in forming concepts and what rules are followed in solving problems (Price-Williams, 1980). Spradley (1979) called this "concept attainment" and suggested that reasoning is culturally embedded in attribution theory. Attribution theory concerns the process by which an observer interprets the cause of an individual's behavior, especially in performance situations (Kelly, 1967, 1973; Sillars, 1980).

Recent studies suggest that employee beliefs about work are shaped by societal values, organizational affiliation, occupational/professional alliances, and functional positioning within an organization. Little theory-based or organizationally specific research has looked at how these cultural differences impact performance. Data are needed to support and enhance an understanding of cross-cultural relations (Adler, 1986), and HRD interventions (Hansen and Brooks, 1994). More specifically, almost none of the research deals with the fundamental aspects of work in transnational settings; that is, how people strategize, negotiate, delegate, and evaluate.

Cultural Knowledge

Culture and Reasoning. Cultural membership implies that a similar world view causes group members to reason and behave in a similar manner. Cultural beliefs drive how they make sense of information and interaction. The term "schemata" has been used to describe cultural differences in perception and to explain the existence of a framework for culturally organizing and understanding experiences (Colby, 1975; Rice, 1980). More recently, Sackman (1991) used the term "cultural knowledge" to explain variance in how organizational cultures and subcultures define concepts and rules for work processes and relationships.

Cultural knowledge as a set of workplace meanings selectively influences how cultures learn and communicate, that is, how they remember, interpret, and attend to messages. In turn, cultural expectations can cause one to misinterpret stimuli that are considered foreign. Rogers (1973) indicated that information communicated in a manner greatly different from what is common culturally often leads to a lack of comprehension or misunderstanding. This premise corresponds to adult learning theory, which considers the learners' prior experience as a key axiom (Knowles, 1980).

Cultural Compatibility. Most individuals are more responsive to organizational and local societal norms if they are compatible with their own cultural knowledge. It appears that the local

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societal culture is at least as influential as a specific organizational culture in influencing norms and employee behaviors (Hofstede, Neuijen, Ohayv & Sanders, 1990; Kopleman, Brief, & Gizzo, 1990). Consider, for example, the notion of "management development." In the United States, it is commonly accepted that anyone can learn anything given the opportunity (Handy, Gordon, Gow, & Randlesome, 1988). Thus, managers can learn and develop leadership skills through training (as evidenced by the plethora of advertisements for management training). In Germany, on the other hand, it is commonly accepted that leadership traits are inbred. These skills surface and are refined during one's youth. Thus, for the most part, that managerial ability is a skill one either has or does not have. Moreover, an individual cannot be "trained" as a manager. Instead, a select group of rising managers are first identified as having high potential. Their innate skills are then enhanced through mentoring or specialized training (Handy, et al, 1988; Hansen, in press). Consequently, if a U.S. company uniformly offered management development training to all staff of its German offices, it is likely that the staff would have problems understanding and/or accepting such training. Adler's (1986) comprehensive review of comparative and cross-cultural management research examines issues of cultural convergence and divergence and how they apply to the workplace. She found that organizations "are becoming more similar in terms of structure and technology, whereas people's behavior within those organizations continues to manifest (national) culturally based dissimilarities" (p. 302).

Adler and Graham (1988) found that people tend to behave differently with members of their own culture than they do with foreigners. In turn, people exaggerate their natural tendencies when they confront cultural differences in real situations, at times becoming defensive because they are protecting the integrity of their belief systems. For example, in organizational settings in the U.S., group meetings often evoke lively discussion for the purpose of shared decision making. In similar settings in China, on the other hand, meetings are leader led, and group members will defer to the leader's decisions. These tendencies are exaggerated when the two cultural groups find themselves at the same table, resulting in diminished effectiveness because they each tend to hold on to their own style of reaching decisions (Lindsay & Dempsey, 1985).

It also appears that culture is instilled from a young age and greatly resists dilution and change despite prolonged exposure to another culture (Shackleton & Ali, 1990). This refutes the notion that people become more culturally similar when they work in a foreign country or culturally different company headquarter sites.

Cultural Knowledge as an Anthropological Lens. Anthropological analysis permits an emic or insiders' perspective. This type of analysis uses the informants' vocabulary to determine how concepts are attained and identify resulting belief and behavioral patterns (Pike, 1967). Sackman's (1991) categories of cultural knowledge are an especially helpful analysis tool for investigating the logic of how cultures classify work rules and definitions. She incorporates attributional theory in a four-component framework:

1. The "what is." These are descriptive categories that provide a kind of dictionary knowledge designed to define and attach meaning to concepts.
2. The "how." These are causal-analytical attributions that provide directory knowledge for task completion and relationships and processes associated with change and learning.
3. The "should." This class consists of causal-normative attributions that offer recipe knowledge for improvements and repair strategies.
4. The "why." These are causal-attributions that provide a kind of axiomatic knowledge about causes and assumptions.

Evidence of Comparative Differences in Representative Research

Sackman's knowledge frame will structure the following presentation of representative research. These data offer evidence of comparative differences in work definitions and rules.

Dictionary Knowledge: The "What Is." One vehicle for understanding how people culturally describe and define concepts is to understand the interrelationship between language and thought, better known as the Sapir-Whorf hypothesis (Carroll, 1956). This viewpoint suggests that language not only reports information but that it shapes our perceptions of reality by developing classification systems to describe experiences and concepts.

On the organizational level, an interesting example of cross cultural differences in definitions comes from the field of human resource development (Hofstede 1980, 1984). The term human resources (HR) is an acceptable term in the U.S. for issues related both to personnel and benefits, and to the development aspects of individual and organizational effectiveness. However, this term is considered offensive to the Dutch because it implies human exploitation and a view of people as commodities.

Knowledge of semantic and conceptual categorical differences can help explain and illuminate patterns for the selective retention, definition, and recall of organizational tasks and roles. For example, Sullivan and Nonaka (1988) found that Japanese and American managers categorized and conceptualized organizational situations differently. American managers were more likely to interpret situations as opportunities rather than problems and were thus more willing to "deal" with a situation and include subordinates in the process. Martin (1993) also found that cultures develop different definitions for what constitutes competence. In turn, these interpretations provide guidelines for judging one's own and others' behavior. Understanding the linguistic differences described in this section can help make practitioners aware of the various ways people in different cultures understand how people categorically define the ends and means of work.

Directory Knowledge: The "How." Sackman's directory knowledge provides a framework for examining how one works with others: (a) What are the work processes necessary for executing a task?; (b) What are the directions for working with others?; and (c) How does one learn to do the task?

Causal analytical attributions clearly drive strategies for task completion. Studies suggest that tasks are affected by the perceived pace of work (Angrosino, 1976; Hall, 1973; Malik, 1979; Shannon, 1976) and a sense of urgency and attention to time (Levine & Bartlett, 1984). It appears that the more industrialized the culture, the faster the pace and the more people pay attention to time. In technologically advanced cultures time is linear and is conceptualized as past, present, and future. Conversely, people in other cultures who may perceive time as circular think in terms of recurring cycles, such as the harvest season or the cycle of life (Hansen, 1993). Task completion is also affected by one's ability to deal with a number of different concepts at once. Research indicates cultural dissimilarities in the ability to problem solve by tearing down and reconstructing ideas and concepts as if they were parts of a puzzle (Hansen, 1993; Luria, 1976; Schribner, 1977;).

Each of the above-mentioned factors can affect a busy manager's ability to respond to quickly changing events and to weigh the numerous variables needed to foresee a broad range of possibilities and consequences. Cognitive differences also occur in task completion strategies between highly industrialized nations. For example, comparative studies of Japanese and American management practices in behavior and time-use patterns found Japanese CEOs to be more deliberate and more planning oriented than their American counterparts (Doktor, 1982; Ouchi & Jaegar, 1978).

Directory knowledge also concerns relationships. Cultures can vary in a natural tendency to look for similarities or differences in employees. Taylor, Simard, McKirnan, and Bellerose (1982) found that Canadian Anglophones looked for similarities while Francophones naturally tended to notice differentiating characteristics in co-workers and between the two groups before they saw the commonalities. The proclivity to see differences first may obstruct communication and the ability to find working accords.

Cognitive variance can impact relationships through negotiation styles. Brewster (1980) reported that the Japanese perceive "a constantly changing continuum of fine gradations" whereas Western negotiators see the world in terms of opposites and choose from a dichotomous set of alternatives. A Japanese manager, for example, is likely to give subtle and inexplicit direction to a subordinate or colleague. Perhaps this is why American (Willmer & Holden, 1987) and Arab (Elashmawi, 1990) workers characterize Japanese managers as being evasive, and they feel frustrated by the lack of clearly negative or positive feedback.

Individual versus team approaches to completing tasks vary culturally. Hofstede's (1980) study of cross-cultural variance in 40 countries found that Asian countries are more collective, whereas the United States is more individualistic. Brooks' (1992) case study research found that American individualism weakened a team approach to organizational learning and transformation efforts. Furthermore, Hofstede's work highlights the role of cross-culturally framed power differences in affecting matrix management and trends towards the delayering of management. Indians, for example, find matrix management harder to implement than people from cultures with a history of lower socio-cultural power differentials.

Finally, directory knowledge can prescribe learning processes. Aranha (1983), for example, characterized the dominant Indian learning style as intuitive and global in contrast with an American approach, which is more analytical. In reference to learning about "great men," she suggested that the Indian tendency to view things holistically highlights one's personal qualities. Comparatively, Americans emphasize achievement by submerging essential qualities with a welter of details and situations. Hayes and Allison (1988) support the hypothesis that culture accounts for differences in learning styles. The authors used Honey and Mumford's (1983) learning styles questionnaire and Hofstede's (1980) approach to measuring cultural difference on groups of 195 mixed nationality, midcareer managers who were pursuing M.B.A. degrees at Leeds University in England. They identified links between learning styles and national cultures by studying midlevel managers from India, East Africa, and the United Kingdom.

Recipe Knowledge: The "Should" and Axiomatic Knowledge: The "Why." These two categories deal with cause-and-effect expectations. Recipe knowledge contained in the "Should" category describes expectations for the ideal situation and prescribes the need for change in current practices and assumptions. Axiomatic knowledge, the "Why," explains reasons for current cause-and-effect scenarios. These causal links are explained in terms of the organization's evolutionary history. Both recipe and axiomatic causal expectations are culturally influenced by several variables: (a) environmental sensitivity, (b) flexibility, and (c) closure needs.

Cultures vary to the extent that their reasoning is influenced by their present environment. Reasoning that is highly influenced by one's environment tends to be less abstract. The Japanese are an example of an environmentally sensitive culture. Conversely, American reasoning is more abstract and linked less to its environment. Doktor (1982) researched causality in his study of Japanese and American corporate behavior by identifying "cause maps" that people use to interpret the behavioral rationale and motives of others. He found that "The Japanese concept of causality is highly sensitive to environmental contexts and relationships; whereas Westerners perceive causation as a response to the action of one or more prior events" (p. 32). His work suggests that Japanese rely more on specific, concrete data and, in turn, do not trust less abstract terms such as productivity or morale.

Bhagat and McQuaid (1982) also studied environmental ties as a key factor in analyzing cross-cultural organizational behavior research. They used differentiation, that is, how one's self differs from one's environment, as an operational definition. They found that relatively complex cognitive systems are more structurally diverse, integrated, and less influenced by their surroundings. Likewise, additional research found that environmentally sensitive individuals with relatively simpler styles perceive clear "beginnings" and "endings" as incongruous with the cyclic, continuous nature of life (Hansen, 1993; Rice, 1980; Worth & Adair, 1972).

Research in cross-cultural field-dependence is linked to these findings. Gruenfeld's (1973) work characterizes field-independent people as more achievement oriented, analytical, and discriminating. Glenn and Glenn (1981) took a similar comparative look at the cultural ability to think abstractly. People in field-independent cultures are also more specific in conceptualizing roles and tasks (Triandis, 1990).

Cultural flexibility can influence one's adaptability and acceptance of outcomes that do not exactly meet ideal or present causal expectations. Risk taking and an openness to new ideas and approaches are thus influenced by one's cultural sense of flexibility. Bhagat and McQuaid (1992) and Hofstede (1980) support the hypothesis that cultures differ in their sense of independence, fatalism, and flexibility when approaching new experiences. In another example, researchers found that Germans are more cautious and less willing to take risks than Americans (Hall & Hall, 1987; Hansen, in press).

Implications for Analysis

Evidence from supporting disciplines illustrates a convincing need to respect attributional differences in how concepts are attained. Sackman's description of how individuals logically acquire and organize cultural knowledge can guide the organizational analysis of performance problems. Researchers can begin by decoding the substance of knowledge categories, that is, "the what, the how, the should and the why" that explain and describe work assumptions. Once a category's content is conceptually identified, its attributional origins can then be explored.

Categorical Knowledge. Analysis should first decode "the what" by categorically describing performance concepts and defining their properties. Researchers can identify the range and kinds of performance issues (and their related subsets) that are important within a given culture. Analysts should look for dictionary knowledge about organizational purposes, members, strategies, and structures. Cultural anthropologists begin their data coding with similar concept-sorting strategies (Spradley, 1979). Performance categories can be defined by examining relevant properties such as frequency of occurrence, organizational importance, and duration.

Once performance issues have been sorted, practitioners should collect dictionary data about related areas of task accomplishment, associated people relations, adaptations and changes, and learning mechanisms. This information reveals the conditions, that is, "the how" processes are executed and should be collected at all hierarchal levels.

Cause-and-effect data can be added to the analysis of conditional data. Information about causes and consequences are associated with recipe knowledge, "the should," and axiomatic knowledge, "the why." Recipe knowledge reveals ideas about desired changes while axiomatic knowledge explains the rationale that drives causal expectations. Information about the latter is generally harder to obtain. Most people are not consciously aware of the evolutionary history of their beliefs or the attributional biases that shape cultural norms.

Attributional Origins. Cultural knowledge is conveyed and, in part, conceived by the local language. Likewise, work definitions reflect the sociocultural context of the national or regional language. Cross-cultural analyses must examine if and how word meanings conceptually vary between host and guest language. The cultural importance of language is reflected in current theories of language acquisition, which place greater value on cultural context than on grammatical perfection (Ommaggio, 1986). In fact, proficiency ratings as defined by the United States Department of State weigh grammatical error as equal to cultural context at levels equivalent to near-native speaking (Ommaggio, 1986, p. 18).

It is additionally important to look for cultural variance in reasoning patterns related to time perception, environmental dependence, and causality models. For example, different time constructs may reflect variance in goal orientations, prioritization, and problem-solving. Likewise, expectations for risk tolerance and the need for definitive outcomes can, in part, be attributed to linear causality models that require clear beginnings and endings. Moreover, cognitive styles that emphasize a collective rather than an individual locus of control can affect collaboration and teamwork. Trainees can be made aware of these principles and how they influence the organization and origin of cultural knowledge.

Required Skills. Researchers who conduct cross-cultural organizational analyses require knowledge of and experience in the ethnographic research designs and analysis techniques that are used to identify cultural phenomena. Proficiency in qualitative data-gathering techniques such as participant observation, ethnographic interviewing, and the examination of cultural artifacts, which can range from document analysis to the analysis of employees' stories of workplace experiences are very helpful.

Also critical is a working knowledge of the local language. The degree of language familiarity will vary, and the necessary fluency will depend on whether researchers are collecting their own data. However, an understanding of linguistics and its semantical effect on concept attainment is essential.

Methodological Issues

As researchers collect information about a given culture, they need to attend to the methodological problems that confound an analysis of the cultural context of organizational and performance analyses. Concerns include disagreement about cultural parameters, and the need to pursue different directions in research designs and data collection methods.

Cultural Parameters. Clarifying the cultural frames that cause shared reasoning patterns is a key priority. Cultural constructs in societal (Kroeber & Kluckhohn 1952; Salzman, 1973) and organizational (Reichers & Schneider, 1990; Schein, 1991; Schwartz & Davis, 1981) studies typically reflect territorial, geographical, and linguistic ties at a specific point in time. However, cross-cultural studies and educational programs inconsistently define the cultural parameters and often presume that societal and national membership are conceptually similar (Enz, 1986; Adler, 1983). The lack of definitional specificity confounds sample frames and the comparative interpretation of results. Additionally, practitioners often assume that nations are culturally heterogenous. In fact, Switzerland, the United States, and the former Russian and Yugoslavian Republics have a great deal of internal cultural diversity.

Some researchers have generated a definition for culture and cognition that supersedes the traditional boundaries of geography and national borders. Hofstede (1984) used the phrase, "the collective programming of the mind," to describe culture. Hamill (1990) defined cultural reasoning as shared conscious and unconscious patterns for manipulating symbols and arranging information. These classifications appear to reflect the more fundamental variables that influence reasoning. Thus, problems with cultural boundaries are driven by confusing cross-cultural and cross-national terminology, inattention to internal national variance, and the importance of variables that drive thinking patterns.

Research Design and Method. Qualitative techniques are traditionally used to research cultural norms and values, whereas reasoning patterns are typically analyzed through experiments. However, cross-cultural comparisons are constrained because of the researcher's inability to assure the required assumptions for control, equivalence, and generalizability that shape experimental models. In their analysis of comparative cognitive research methods, Cole and Means (1981) warn researchers about the complexity of cognitive study: "In comparative studies cognitive processes are even harder to track down because we really do not know what independent variable is being manipulated" (p. 70).

The attributional biases associated with culture and reasoning are influenced by a number of variables whose existence and relative strengths differ cross-culturally. Consequently, there is skepticism of inquiry that attempts to extrapolate broad hypotheses about reasoning from a narrow range of tasks that are executed in controlled settings.

Bhagat and McQuaid (1982) and Hansen and Brooks (1994) note that few studies of cross-cultural workplace behavior employ an in-depth, qualitative strategy, such as participant-observation, interviews, and content analysis, to understand phenomena "through the subject's eyes" (Pike, 1967). This trend is also found in general cross-cultural management literature (Peng, Peterson, & Shyi, 1991). Causal-comparative paradigms have been criticized for employing terms and concepts that were derived outside the culture and, in turn, yielded biased data (Marshall & Rossman, 1989; Spradley, 1979). Proponents of the emic/etic debate argue that informants view the world in terms of their own definitions rather than imposing the researcher's "outsider's" definition; thus, the latter ignores innate differences that defy and confound equivalent group comparisons. The inability to establish true comparisons counters the hope of generalizability of results to universal principles.

Clearly, careful attention to cultural context in research design and methods is critical. The issue of "cultural relativity" subdues arguments for a kind of "universalism" in developing formulae to explain comparative managerial reasoning patterns. Likewise, the difficulty of assuring equivalent group comparisons and control for culturally influenced task bias limits the generalizability of any cross-cultural data.

Implications for Theory and Practice. The role of human resource professionals is changing as they operate in culturally diverse settings both in the U.S. and internationally. This has implications for both the design of academic human resource training programs and for the practice of human resource development.

Academic programs must address and respond to the need for cross cultural awareness and understanding. Cross-cultural research and instruction have traditionally focused on community norms, leaving a void in our efforts to search for a rich and in-depth understanding of the intricate interactions associated with culture and reasoning. More and better inquiry that is methodologically sound and attentive to emic cultural perspectives is needed to guide evolving training efforts. Such insight reflects the phenomenological perspective found in field-based, qualitative research. Enhanced research and teaching that help human resource performance analysts decipher the conceptual links between culture and reasoning can lead to better preparation for those who must decode the cross-cultural complexity of organizational behaviors.

In practice, the need for cross cultural awareness and understanding impacts the areas of training, career development, and organizational performance. In developing cross cultural training models, there should be an emphasis on the concept of uniqueness in describing a culture's reasoning patterns. Training models designed with these considerations in mind clearly affect the assessment strategies used by human resource professionals who conduct front-end analyses. Moreover, these cross cultural issues are not limited to overseas ventures and they are, in fact, very much akin to multicultural and workplace diversity trends that increasingly affect domestic organizational performance improvement efforts.

Summary

The growth of overseas organizational expansion has directed the focus of this paper. Furthermore, these cross-cultural issues are very much akin to multicultural and work place diversity trends that affect performance improvement in domestic organizations. Enhanced research and teaching that help performance analysts decipher the conceptual links between culture and reasoning can lead to better preparation for those who must decode culturally different organizational behaviors.

Sackman's (1990) cultural knowledge frame offers a useful tool for both exploring representative research and examining how cultural frames influence workplace meaning and performance. Likewise, an anthropological lens provides the opportunity to capture cultural definitions from an emic perspective.

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Embracing the Humanism of Africa in the Practice and Thought of Human Resource Development

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This paper is a reflective study of two key issues the author believes to be relevant to the HR-HRD profession. The first, that the HR-HRD profession is at a significant cross road, a cross road that will bring with it the need for HR-HRD professionals and practitioners to find new answers and models of organization, management, learning and leadership. The second, that the need to incorporate the humanistic spirit of the African people into productive organization, a necessity being faced and met by leaders and organizations of the southern African region, may offer HR-HRD practitioners and professional a worthy lens through which the answers to these professional challenges may be considered and met.

The purpose of this paper is to explore the following propositions I believe to be true of the practice and profession of Human Resource Development, namely,

- that the Human Resource function within organizations is at a cross road
- that HRD professionals/practitioners will need to relearn skills and practices to stay relevant in the emerging organizational era of increased change, chaos and globalization
- that the emerging business sphere in southern Africa could provide a worthy and alternative lens for confronting the changes and challenges facing the HR-HRD field.

In structuring this exploratory research I have made use of the following methodology:

- to identify the *key assumptions* about HR-HRD profession that underscore these propositions, and to turn to relevant HR literature to establish whether there is evidence that might support these assumptions
- to identify what some of the *key shifts* (the "From's - To's") may be that are confronting the HR-HRD profession as it faces this cross road
- to consider the emerging *business sphere* in southern Africa as a worthy lens for confronting the changes and challenges facing HRD practitioners, and the insights this new lens may offer.

Certainly more questions than answers have emerged for me as a result of this research. These are addressed in the concluding section of this paper.

Setting the Context

It is my observation that an interesting contrast exists, in the nature of the study of human resources related issues, between the United States and South Africa.. In the United States it appears that there is more time to ponder the thoughts and possibilities of human resource issues. As a result much of the learned writings in this field seem to originated from the North American continent. In contrast, South African companies, because they are faced with the a struggle of survival on every imaginable front, are rolling up their sleeves and experimenting with many different approaches to the application and integration of human resources in business. Unfortunately the urgency of the South African business environment, and the need to bring about fundamental change very rapidly, has not lent itself to empirical study and writings on the learnings of these often very courageous steps. Hence, until recently, there has been a lack of related writings to emerge from this country.

There is, however, much mutual learning to be shared between these two environments. Together, new models, new possibilities, and new learnings will, I believe, begin to emerge that will benefit us all. It is from an attitude of "and, both" (White, 1992) that a valuable and

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transcending learning partnership can develop between these two societies. It is further my belief that southern Africa, too, has something of unique value to bring to the global party of shaping and crafting an HR-HRD practice that will be repositioned to play a fundamental role in the global business environment of the future. This is strongly echoed by Louis van der Merwe, an international business consultant and founder of the Centre for Innovative Leadership in South Africa: "Nowhere else in the world does the thinking from the East, West and North come together in a more fertile environment or in a situation where the urgency of finding new solutions to enduring challenges is as great. The practices, processes and tools that we test and develop here in South Africa will provide solutions which address our immediate and long-term needs directly. They will be a product of creative synergy between the best practices from the East, West and North combined with what is best from Africa. These solutions may provide a return on investment in other countries of similar need in Southern Africa and elsewhere in the world" (Van der Merwe in Lessem, pp. 243-244).

Key Assumptions

Underlying the initial propositions highlighted in this paper are the following key assumptions:

- that the HR-HRD (as an internal organizational function) role in the future is likely to be significantly different to what it is today
- that HR-HRD has an increasingly meaningful role to play as an internal component of organizations in the future
- that HR-HRD will have to undergo some fundamental changes to be able to play this new role
- that this new HR-HRD role will require new capabilities, values and behaviors from those in the internal HR-HRD function, and
- that those who can make the changes are likely to survive and take the (internal) HR-HRD function to new heights as a valued organizational member, and a meaningful and recognized contributor to organizational competitiveness, effectiveness and success
- that not all internal HR-HRD functions will be able to make the necessary changes to this new role
- that those HR-HRD functions that cannot make these changes are likely to be reduced to operational activities, removed from the core of the business, and are likely to run an increasing risk of being cut out of organizations, becoming targets for outsourcing, downsizing and window-dressing Affirmative Action programs, the latter particularly in South African organizations.

I would now like to turn to the literature for evidence and support of the above assumptions and therefore the first two propositions put forward in this paper.

Supporting Evidence

Starting with the assumption that the HR-HRD role is likely to be significantly different in the future the thoughts of two authors lend particular support to this possibility. The first is Patricia McLagan (1989). In matching systems models with future HRD issues, McLagan suggests that shifts in the work environment are causing us to "re-think our organizations" (p.62). In this process she further suggests that systems thinking offers a way of re-thinking our organizations and that some organizational processes "that have been allowed to occur haphazardly, but are key to future success, must become more deliberate and prominent" (p.62). "The development of organizations and their people is one such process", she says. "It must keep pace with and even help shape the pace of change and challenge in the environment" (p.62). McLagan very aptly describes organizations as "standing at the dawning of a new organizational age", an age that will demand fundamentally different things of its people and processes (p.1). She also states that "HRD and OD are becoming an acknowledged and central process in organizations today" (p.81). That "in the future HRD will undoubtedly become recognized as the competitive advantage of organizations...", but that although development will be key to this new role, it will have to be tackled from a systems perspective, which "will be very different from what it is today" (p. 81). She goes on to say that "development is the key to success as we enter the 21st century" (p. 81).

The importance of HR-HRD adopting a systems perspective is echoed by Richard Swanson who perceives the "HRD systems bag to be short on tenacity and resolve" (1992, p. 214). He goes on to say that although HRD leaders "talk systems theory ... they could not punch their way into the bag of a systems practitioner" (p. 213). Although Swanson alludes to numerous pending changes in the HR-HRD role and practice, two key examples put forward by him capture this change in the form of challenges. The first being about "those in HRD who pursue diversity separately from high performance are in for a rude awakening" (p. 319). He stresses the importance of "valuing diversity with performance" as a possible ticket to excellence, as opposed to "valuing diversity without performance" being about a ticket to mediocrity" (p. 320). Another apparent hot button for Swanson concerning the changing role and skills of HRD practitioners is the issue of "ROI of HRD dollars" (1993, p.121), a skills which he reports HRD practitioners as having a "consistent aversion to" (p. 121). Although Swanson says that "HRD can be a serious business partner" (p. 122), he also underscores the need for the profession to focus on "core business measures" and the reality that it "can (only) become a legitimate contributor to the organization by documenting the ways in which it enhances learning ... when it regularly presents documented enhancement of performance" (p.123). He further highlights the "importance of HRD to individuals, organizations, our nation and our world" by calling for an "HRD manifesto"(p. 327), for he feels that "more than any other corporate function HR-HRD needs to be out in front advocating clear policies and making clear calls about human performance in the workplace" (p.329).

From Swanson to McLagan, Dahl to Haltshorn, Chalofsky to Passmore the message is clear: the times are changing and HR-HRD will need to change with it, will need to develop new theories, practices, techniques and methods, and find new ways of contributing visible, measurable value to organizations in the future. They will need to develop stronger and new theories, theories, Swanson says, that will strengthen, "build and maintain the psychological leg of the organization" (p.220), that will make for more purposeful and thorough analysis and interventions for organizational performance improvement. If they don't, they will have to "move out of the way"(p.123) of those who are struggling with understanding and improving the core business processes essential for future survival.

The nature of this change and challenge to the HR-HRD profession is also found echoed in a study on Human Resources Development as an Occupational culture by Hansen, Kahnweiler and Wilensky (1994). Their exploratory findings suggested that "HRD is a cultural entity that is more concerned with employee development and work autonomy than with overall business agendas" (p.235). They further reported that "people skills prevailed over business acumen" and that HRD practitioners studied consistently reported an "us versus them" mentality (p.263). They further found a "competitive undercurrent between HRD and the dominant (top management) culture, and concluded that "unless HRD tackles these cultural conflicts head-on, its strategic role will be limited, its energy will be diffused, and its importance as a change agent of positive organizational change will be minimal" (p.266).

It will be a sorry and unnecessary day should the function of HR-HRD within our organizations be reduced to such a minimalist role.

The Shift to a New Organizational Age

Numerous people have written about the shifts we are facing in our environs as we move from what has often been described as the Industrial to the Information Age (McLagan, 1990). This Age is predicted to be fraught with continuous, quantum change, increasing chaos, and the need to develop new perspectives to understand, make sense of and improve the functioning and indeed survival of our organizations. Peter Senge refers to the organizations that will be likely to survive these Age changes as "metanoic organizations"(1990, p.13) - organizations of a fundamentally different form and mind. Whatever they emerge as, one thing we can be sure of is that they will be of a significantly different nature to that which we know today. Another is that the human element in these organizations is likely to be of more significance than ever before, and the key to continued organizational performance and survival. The challenge this poses the HR-HRD practitioner and profession is enormous, and the significance of this challenge is illustrated in the table following.

Figure: **The Nature of the Age Shift facing the HR-HRD Profession**

FROM: OLD INDUSTRIAL AGE	**TO**: NEW INFORMATION AGE
TECHNOLOGY Production focus Metaphor of assembly	TECHNOLOGY Learning focus Metaphor of morphogenesis
WORK ETHICS Instrumental view Precedent driven	WORK ETHICS Sacred outlook Judgement driven
STRUCTURES Ordered by hierarchy Tall and Rigid	STRUCTURES Ordered by heterarchy Flat, concentric, organic & flexible
LEADERSHIP Leaders are born Leaders are at the top of an organization	LEADERSHIP Leadership is learned Leadership occurs at all levels within the organization
MANAGEMENT Tell and control Company imposed training	MANAGEMENT Ask and coach self-directed learning
CUSTOMER Quality dictated by supplier Uninformed Limited choice	CUSTOMER Quality dictated by customer High savy, informed Virtually unlimited choice
MARKETING Stable, simple markets Local and national markets	MARKETING Volatile, varied, sophisticated Global markets & competition
STRATEGIC PLANNING Driven by the past Relatively stable, predictable environs	STRATEGIC PLANNING Driven by the future Highly unstable, unpredictable environs
SOCIAL RESPONSIBILITY Independent of the community Local environment	SOCIAL RESPONSIBILITY Interdependent community Global environment
ECONOMIC/FINANCE Primary product and industrial economy separated Production and employment inseparable	ECONOMIC/FINANCE Primary products & industrial economy separated Production separated from employment

Note (Based on the works of McLagan, Dychtwald, Drucker, Harman, Senge and Keifer, Moss Kanter, Lincoln, Barker, Kuhn, Bridges, Daniels and Raudebaugh, Gardner, Asimov)

(Source: Lynham, 1992, p. 19)

The shifts highlighted in this table, capture, to some extent, the magnitude of the "Agewave" organizations are busy having to ride to survive into the future (Dychtwald in Lynham, 1992, p. 19). Each of these shifts will likely demand significant changes and new understandings, methods, techniques and theories from the HR-HRD practitioner and profession to enable these to appropriately diagnose and address performance improvement issues in our organizations of tomorrow.

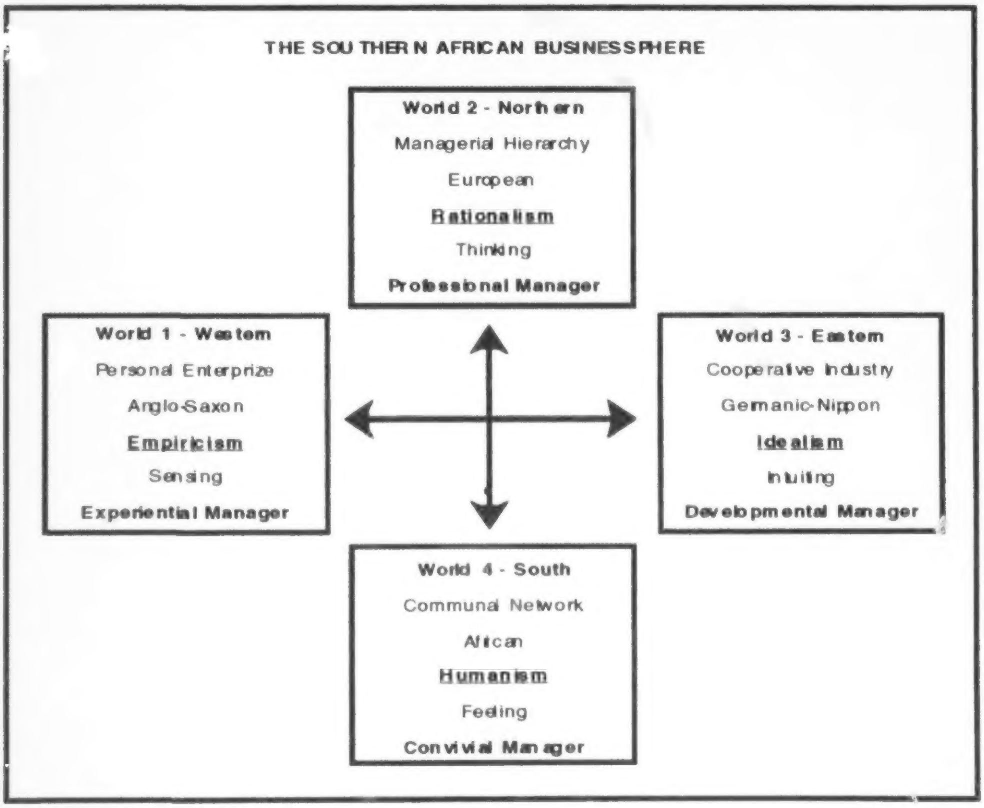
Having found evidence in the HR-HRD literature to support my two initial research propositions I would now like to explore the third proposition, namely, that the emerging business sphere in southern Africa could provide a worthy and alternative lens for confronting the changes and challenges facing the HR-HRD field. By way of introduction I would like to briefly introduce the concept of the southern African business sphere, a concept clearly laid out in a recently released book called *African Management* (1993), edited by P. Christie, R. Lessem and L. Mbigi.

New Insights Emerging from the southern African Business Sphere

I have for many years contended that one could look at leadership, an area closely related to HR, from the perspective of a global compass, where each polarity of the compass represents a distinctly different cultural orientation and collection of wisdoms about leadership: the North representing the European, the West the American, the East the Asian and the South, the African cultures. Each brings to the party a unique and valuable wisdom about leadership. Seen together these can help us synergize a more globally acceptable and relevant understanding of leadership. Seen in this context, the West brings the wisdom of the pioneering spirit of the American people and their command of technology, theories and new thinking to leadership. The North brings the wisdom of the past, tradition and protocol to leadership, while the East brings to leadership the wonderful wisdom of patience and the understanding that all things are interconnected. Africa, I believe, brings to leadership the wisdom of the soul, of people and of simplicity. I have never articulated this concept to anyone other than my colleagues and previous academic advisor, and so was both encouraged and excited to see this concept explored in the context of the Southern African Business sphere and a call for an integrated approach to African management, by Ronnie Lessem (1993). This work, together with that of Lovemore Mbigi and Reuel Khoza on the need to recapture and integrate the traditions, values and energy of the spirit of the Black African people in emerging African management, offer some interesting insights into the challenge facing the HR-HRD practitioners/profession operating in the southern African business environment. Although all three writers speak essentially to management practices and theories, one could just as easily see their target audience as the HRD practitioner and profession. I believe that the insights offered by these writers lend us new and worthy lens for thinking about and crafting the emerging HR-HRD role in organizations of tomorrow, be they in southern Africa, or abroad.

Lessem begins by introducing the possibility that the knowledge source of the southern African business sphere comes from four differentiated cultures and philosophies ... "empiricism, rationalism, idealism, and humanism" (1993, p. 18). He believes that each of these generic philosophies "have spawned diverse economic concepts and applications that precondition global activity" (p. 18). The figure below illustrates these four philosophies and accompanying business practices, temperaments and management styles and structures that are seen to dominate each of these four knowledge sources within the southern African business sphere.

Figure: **The Four Worlds of the Southern African Business Sphere**


THE SOUTHERN AFRICAN BUSINESSPHERE
World 2 - Northern
Managerial Hierarchy
European
Rationalism
Thinking
Professional Manager
World 1 - Western
Personal Enterprize
Anglo-Saxon
Empiricism
Sensing
Experiential Manager
World 3 - Eastern
Cooperative Industry
Germanic-Nippon
Idealism
Intuiting
Developmental Manager
World 4 - South
Communal Network
African
Humanism
Feeling
Convivial Manager

Lessem, 1993, pp. 18-22

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Lessem believes that only one of these philosophies, namely, that of the western market economy and its "derivative business practice of personal enterprise, has seen the full light of our economic day". "As for the other three", he says, "their time in only now beginning to come, both in theory and in practice" (p. 19). He suggests however that the "time has come to both extend and deepen our business and economic foundations" (p. 19). By way of further explanation of these four worlds, Lessem describes the dominant story and focus of the subject and object of each in the southern African business context.

Western Empiricism relies on factual information, experience or observation rather than on system or theory. "It emphasizes the practice of experience, especially of the senses, and relies on sensation rather than intuition, induction rather than other rationalistic means in the pursuit of knowledge" (p. 22). Key features of empiricism are seen to be the aspects of kindred philosophies, which focus on "pragmatism, and utilitarianism"; the unit focus being that of the "entrepreneur and enterprise"; the business outlook, which is seen to be of "competition, transactional"; the managerial orientation being "experiential"; and the psychological type that of "sensing and action orientation" (p. 23). Lessem points out that the "subject of southern African empiricism has been the individual entrepreneur, recently beginning to evolve in orientation from self-help to self-development", and the "object has been the independent enterprise" (p. 25).

Northern Rationalism "relies on the notion that reason is in itself a source of knowledge superior to and independent of sense perceptions - knowledge can ... be deduced from a priori concepts ... and is opposed to non rational emotion or intuition" (p25). Lessem sees the key features of rationalism as the kindred philosophies of "positivism and scientism", the unit focus of management and organization, the business outlook of "coordination and hierarchy", the managerial orientation that of the "professional", and the psychological type being "thinking, analysis oriented" (p.26). He points out that "the subject of southern African rationalism has been depersonalized management, which has not duly evolved from a functional to a structural one", while the object he sees as being "the enterprise as an institution, dependent on orchestrators" (p. 28).

Eastern Idealism is about "a conception of something in its highest perfection; a theory that affirms that mind, or the spiritual or ideal is of central importance in reality" (p. 28). The key features of this orientation are highlighted by Lessem as being a kindred philosophy of "romanticism and historicism, a unit focus of "industrial association", a business outlook of "cooperation and systemic", a managerial orientation of "development", and a psychological type of "intuiting, reflectively oriented" (p. 29). The subject of African idealism according to Lessem has been "developing individuals and associations", whiles its object he sees as being "the economy" (p. 31).

Lastly Lessem turns to *Southern Humanism*, which he describes as "pertaining to the social life or collective relations of mankind; devoted to realizing the fullness of human being; a philosophy that asserts the essential dignity and worth of Man(kind), relating to the arts of humanities, to the 'good' things in life" (p. 31). The spirit of Southern Humanism is captured by a quote in Albert Koopman's book on Transcultural Management: "I am, therefore the more I am prepared to give and share" (1991, p. 83). In the Humanistic way the key features are a kindred spirit of "aestheticism and naturalism", a unit focus of the "family group and social community", a business outlook with a focus on the "communal and networked", a managerial orientation of "convivial", and a psychological type of "feeling, concretely oriented" (p. 32). Lessem suggests that the subject of humanism has been the "socially and artistically based animateur" which has duly evolved from "matriarch or patriarch to social architect", while the object has been the "community" (p. 35).

The difference between the first three Worlds and that of Africa is perhaps best illustrated in the contrast between individualism and communalism. Unlike individualism ,where "The more I have the more I am", in communalism worth is symbolized by "I am, therefore the more I give" (Lessem, 1993, p. 36). In communalism "an individual emerges out of a group", "profit ... is a vote of confidence given by an individual's society for services rendered to it", "the more the communal person is prepared to give and share, the more respected (s)he becomes" (p. 36). A communal orientation is about cooperation and interdependence and the "greatest hope is for the upliftment of all" (p. 36).

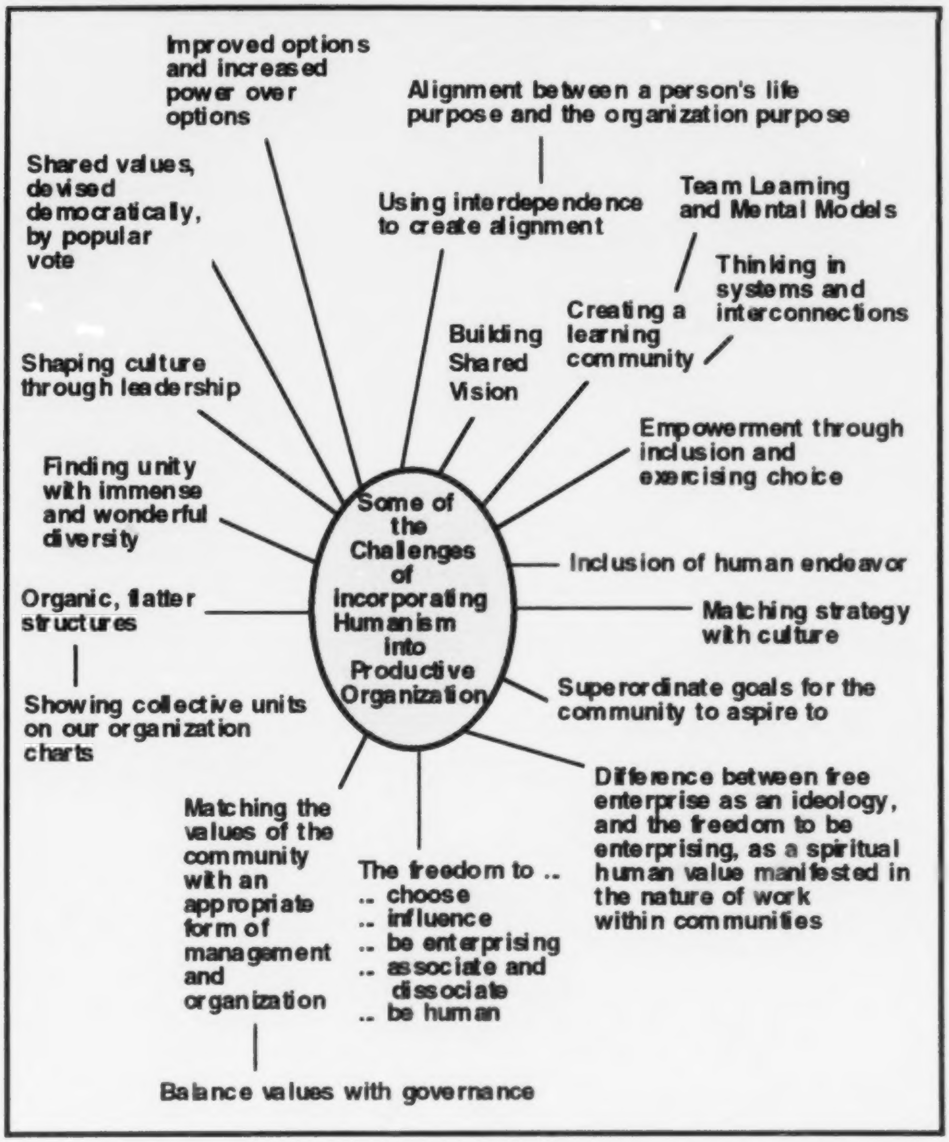
Perhaps the best illustration of the spirit of communalism that is so much a part of the soul of southern Africa is through the philosophy of "Ubuntu". Reuel Khoza explains this as best being captured by the expression: "A person is a person through other human beings - I am because you are, you are because we are" (1993, p.123). Khoza goes on to say that with "diligent cultivation" the concept of Ubuntu should be extendible to the business corporation. "Ubuntu as an orientation to life", he says, " is opposed to individualism and insensitive to competitiveness. Neither is it comfortable with collectivism where collectivism stresses the importance of the social unit to the point of depersonalising the individual. At the same time it places great importance on working for the common good" (pp. 122-123). Lovemore, Mbigi and Lessem all stress the need for business management in southern Africa to develop a spiritual base for it to become "a mature and fully fledged discipline" (Mbigi, 1993, p. 16). Mbigi goes on to say that there is a need to focus on "the development of authentic theories, philosophies and values to guide current business practices, processes and techniques", for "only then", he says, "can business make the decisive transformation it is being called to make in Africa" (p. 16).

In looking at some of the biggest fears my fellow South African colleagues have expressed over the past year, one of the most frequently aired is that of the unrealistic expectations of the Black Africans in the new South Africa. Mbigi offers another way for organizations to view and manage this reality. He very wisely stresses the need for organizational leaders to reconcile the creative tension between the "workers glorious vision of prosperity on the one hand and the limitations of reality on the other" (p. 80). Instead of the usual reaction of management and Human Resources to go out and dismiss the workers dreams as impractical and try to replace these with "more rational, informed and practical vision", he suggests the integration of these two tensions and the management of these towards the dreams of the workers. For if the African way is a communal way, then the fulfillment of the workers dreams within an organizational community is the same as the fulfillment of the organizations dreams. In southern Africa we will have to find ways to forge new management paradigms, where the "African traditional practices", too, can "become the basis for management and institutional innovation" (Mbigi, 1993, p.88). As Mbigi, Khoza and Lessem suggest: the challenges of management will require a new paradigm/mindset, a mindset "that will be able to balance and reconcile these existing opposites ... and that can synthesise these polarities" (p. 88).

Embracing the Humanism of Africa in the Practice and Thought of HR-HRD

It is concluded that the Human Resource function within organizations is at a cross road. HR-HRD professionals/practitioners will need to relearn skills and practices to stay relevant in the emerging organizational era of increased change, chaos and globalization. The emerging business sphere in southern Africa could provide a worthy and alternative lens for confronting the changes and challenges facing the HR-HRD field. In closing I would like to propose what some of the aspects of the humanism of Africa are that could help us in shaping and contributing to the performance of our organizations in an emerging, new organizational reality. These are illustrated in the figure following.

Figure: **The Challenges of Incorporating Humanism into Productive Organization**


Some of the Challenges of Incorporating Humanism into Productive Organization
Improved options and increased power over options
Alignment between a person's life purpose and the organization purpose
Using interdependence to create alignment
Team Learning and Mental Models
Thinking in systems and interconnections
Creating a learning community
Building Shared Vision
Shared values, devised democratically, by popular vote
Shaping culture through leadership
Empowerment through inclusion and exercising choice
Finding unity with immense and wonderful diversity
Inclusion of human endeavor
Organic, flatter structures
Matching strategy with culture
Showing collective units on our organization charts
Superordinate goals for the community to aspire to
Difference between free enterprise as an ideology, and the freedom to be enterprising, as a spiritual human value manifested in the nature of work within communities
Matching the values of the community with an appropriate form of management and organization
The freedom to ..
.. choose
.. influence
.. be enterprising
.. associate and dissociate
.. be human
Balance values with governance

(Koopman, 1991; Van der Merwe in Lessem, 1993)

The above figure is at this stage still a scatter diagram illustration of the types of challenges of human organization that companies of the southern African continent are faced with as they begin to reconstruct, develop and implement models of African management in their day to day practice of free enterprise. The answers to these challenges will have to come out of models that are born of the synergy of the best of all four Worlds. The essences that bind them together will have to speak to the human spirit and the Will of Africa. The question facing the people of these organizations will be how to form and orchestrate organizations that will both unleash this spirit and still remain of a high performance and productive nature. The answers that emerge will undoubtedly be worthy of global thought and study.

As I was traveling through the recently released works of *African Management* (1993), the first book of its kind in South Africa, I could not help but think of the enormity of the challenge facing all southern African businesses, and indeed people. These are about the igniting of the soul of the human spirit in the workplace so that southern African companies, too, can compete and perform, and indeed perhaps one day help shape the world class practices of our organizations of tomorrow. As much as these are the things of management, so they will be the things of HR-HRD, and of the face of the emerging profession, not just in southern Africa, but in environs way beyond that. This lens can be used to provoke and better our understanding of the nature of a new age of HR-HRD practice and profession. For, in a way, the things that are happening in southern Africa are happening globally, as we as individuals, organizations, societies, nations and global citizens grapple with the difficulties of living as one community on planet earth.

From the southern African continent are likely to come some interesting new forms of organization, forms that will need to be systemic, communal networks that cut across the formal hierarchies of the many organizations, indeed that cut across the very essences of organizations as we know them today. The role of the HR-HRD practitioner in this context will be need to be one of social architecture and will require skills of human performance and process understanding that will likely serve the profession in a noteworthy way in the future. It will be wise for the HR-HRD professionals outside of this context to watch and learn from these emerging developments.

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An Empirical Study of Employee Involvement in Designing and Managing Reward Systems

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A study of nearly 300 organizations was conducted to assess the nature and extent of involvement among non-management employees in designing and managing pay systems. Overall, the extent of involvement was found to be modest and unrelated to organizational size and industry. However, some organizations grant considerable responsibilities in this area to nonmanagement employees. Involvement tended to occur informally rather than systematically. Case examples are provided and implications for HRD research and practice are discussed.

Many American businesses are struggling to find, keep, and motivate employees who are dedicated, flexible, and highly skilled. Increased domestic and global competition, flattened organizational structures with few promotional opportunities and vast spans of control, and a downsized work force whose loyalty to their employer is minimal or non-existent exacerbate this challenge.

One response by corporate leadership has been to promote more involvement of non-management employees in areas that traditionally have been managers' responsibilities. These areas include quality, production standards, personnel selection, strategic planning, and work redesign (Bowman, 1989; Das and Shikdar, 1988; Newstrom, Lengnick-Hall and Rubenfeld, 1987; Pace, 1987; Macy, Peterson, and Norton, 1989). The rationale for such practices is typically that the people who are in the best position to solve problems and make decisions are the ones who are "closest to the action." See Bass (1991) for an exhaustive review of theory and empirical research (including meta-analyses) on employee involvement.

The vast amount of research on employee involvement shows mixed results regarding its effectiveness. Nevertheless, it appears that more and more organizations are either considering adopting it or actually doing so (Kahnweiler, 1991b; Lawler, Mohrman, and Ledford, 1992). It also appears that the trend of pushing problem solving and decision making down to the lowest possible level of the organization will likely continue throughout this decade and into the next century (Bluestone and Bluestone, 1992; Leana, Locke, and Schweiger, 1990).

In addition to increased employee involvement in business operations, organizations are scrutinizing their compensation systems more carefully (Gomez-Mejia and Welbourne, 1988; Lawler, 1990; Lawler, Ledford, and Mohrman, 1989). Achieving the more traditional objectives of compensation plans--to attract, retain, and motivate valued human resources--is a necessary but insufficient means of supporting an organization's aspirations for prosperity in a volatile business climate (Miner and Crane, 1994; O'Dell, 1987; O'Dell and McAdams, 1987). The perspective of pay systems is shifting from the tactical to the strategic. Organizations are expecting their reward systems to be both cost-effective and an impetus for long-term business success. These expectations are not easy to meet. One response has been to experiment with imaginative pay systems that have little historical precedent (Miner and Crane, 1994).

Despite the fact that many organizations appear to be increasingly interested in employee involvement and effective pay systems, there is little evidence of the merging of these two trends. Empirical research concerning the nature and extent of employee involvement in the design and management of compensation programs is much less prevalent than theoretical and anecdotal accounts (for example, see Lawler and Cohen, 1992; Schuster and Zingheim, 1992).

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As an initial response to the lack of empirical findings on employee involvement in the compensation arena, an exploratory study of non-management employee involvement in various aspects of compensation plans was conducted. The study attempted to identify the degree of employee participation in pay systems, the methods used to foster it, and the particular components of compensation system design and management in which such participation is encouraged. The prevalence of so-called non-traditional reward systems (for example, gainsharing and skill-based pay) and the identification of the factors which account for a lack of employee involvement in compensation were also assessed.

Following a description of methodology, the key results and major conclusions drawn from these results will be presented. Implications for HRD practice (including illustrative case examples) and suggestions for further research will follow. As used in this article, the term "employee" pertains to personnel who occupy non-managerial positions--i.e., individual contributors.

Method

***Sample*.** Since this study was exploratory, a broad representation of organizations across sizes and industries was desired. A total of 1078 surveys were mailed to such organizations throughout the Southeastern United States. The targeted enterprises included businesses ranging from small to those in the *Fortune* 500 (industrial and service) as well as non-profit organizations. Either the top human resource officer or the senior compensation manager/specialist was asked to complete and return the survey instrument.

***Survey Instrument*.** The preliminary design of the survey instrument was piloted with a sample of 30 managers. This led to the re-wording of a few survey items. The instrument was designed to obtain a critical mass of data while minimizing the amount of time and effort required from participants. It was therefore comprised mainly of items which elicited categorical data. However, to measure the extent of employee involvement in various aspects of compensation plan design and management, subjects were asked to indicate one of four levels: 1) None, 2) Consider Ideas, 3) Recommend, and 4) Empowered To Decide. Conceptualizing the employee involvement process on a continuum has ample precedent (for example, see Cotton and others, 1988; Crane, 1976).

***Data Analysis*.** Based upon demographic information obtained, responses to survey questions were grouped by size and industry of each participating organization. Chi-square tests were then applied to the categorized data to determine if company size and industry were significantly ($p < .05$) related to differences in overall involvement level, types of pay plans employed, involvement vehicles utilized, and the reasons for non-involvement. To test whether levels of involvement on specific aspects of compensation system design and management were significantly ($p < .05$) different among size and industry groups, a general linear analysis was used. As appropriate, any narrative comments provided by respondents were either assigned to existing categories or content analyzed and placed in a new category.

Key Results

***Sample*.** A total of 290 usable returns were received, resulting in about a 27% response rate. This compares very favorably with other survey research on employee involvement.

Data was obtained from a broad cross-section of firms. Organizational size, as measured by number of employees, varied from less than 50 to more than 50,000. Virtually every major industry category was represented.

While the sample was limited to firms in the Southeastern U.S., its diverse composition (in terms of size and line of business) and the large number of respondents make it reasonably likely that the results are relevant to other regions of the country.

To facilitate data analysis, each participant was grouped into one of four size categories and one of three industry categories. The size categories were: 1) small = less than 500, 2) medium = 500-999, 3) large = 1000-2999, and 4) very large = more than 3000. The industry categories were: 1) product (for example, manufacturing, high technology, chemicals, food and beverage), 2) service (for example, transportation, hospitality, health care, professional/consulting services, insurance, banking, utility), and 3) institutional (for example, education, government, social services, professional association). A complete breakdown of the sample may be obtained from the author.

Overall Involvement. Almost half of the organizations (134 out of 290) indicated they involve non-management employees in designing or managing some aspect of their compensation plans. There was little variation among different size and industry categories.

Prevalence of Different Types of Pay Plans. Among the forms of compensation which are most directly associated with employee involvement, skill-based pay is operative in more organizations (nearly 28%) compared with gainsharing (7%), group incentives (16%), and an all-salaried workforce (nearly 17%). Interestingly, approximately the same proportion of firms use skill-based pay as those which have a profit-sharing plan. Skill-based pay, a relatively new concept in which compensation is based on the level and/or mix of competencies possessed by the job incumbent, has often been installed in organizations as part of a larger employee involvement effort. In contrast, profit sharing has existed for decades and is not necessarily linked with employee involvement initiatives.

Group incentive plans, in which team rather than individual performance is expected and rewarded, are often part of a larger employee involvement effort. This type of reward system was reported to be significantly less prevalent in companies with fewer than 500 employees (8.9%) and more common as company size increases (15.7%, 21.4%, and 24.1% for medium, large, and very large, respectively). However, organizations across different industries and sizes appear to favor the use of individual incentive plans over group-based rewards (39.9% versus 17.5%).

Involvement Vehicles. The vehicles used to foster employee involvement can range from very informal to extremely systematic. This study found that the more informal the vehicle, the more it tended to be used, and vice versa. For example, informal groups (that is, those which do not meet regularly or whose composition is not pre-determined) were found to be the most common method of involving employees in pay systems (44%). In contrast, systematic procedures, such as QWL teams or standing committees, exist in relatively few organizations (6.7% and 5.2 %, respectively). The number of firms which involve employees through ad hoc committees/task forces (24.7%) and joint employee-management committees (17.2%) fell in between these two extremes.

It is interesting to note that in contrast to today's emphasis on quality, only 3 organizations out of 134 (2.2%) indicated they used TQM groups or teams to involve employees in designing or managing compensation plans.

Extent of Involvement. For each of 11 activities typically associated with designing and managing pay plans, respondents were requested to indicate one of the four aforementioned levels of involvement: 1) None, 2) Consider Ideas, 3) Recommend, and 4) Empowered to Decide. The areas in which the extent of employee involvement was most pronounced were 1) preparing job descriptions, 2) identifying job requirements, and 3) determining performance measures. These components of compensation systems were ones in which a sizeable number of organizations sought employee involvement beyond the level of providing information or ideas.

For example, many organizations in the sample want job incumbents to write their position descriptions, indicate the key skills needed to perform their job, and suggest ways that their performance should be assessed. At the same time, organizations appear reluctant to empower employees to make decisions about the content of their job descriptions, the skills required to perform their jobs, and how their performance should be measured.

The level of employee involvement in determining compensable factors (i.e., dimensions such as skill, knowledge, problems encountered) was reported as modest. Organizations involve employees to minimal degrees on seven other compensation design and management activities. These are: conducting job evaluations, obtaining or analyzing market data, developing salary administration policies, determining jobs or people eligible for pay programs, determining payout levels for various performance levels, determining compensation mix, and determining pay structures. Subsequent analyses through a general linear model resulted in no significant ($p > .05$) differences in level of involvement among different size and industry categories.

While the absolute number of organizations which grant employees the power and authority to make decisions on compensation issues is low, it should be noted that some organizations indicated they do so. For example, the lowest level of involvement on any activity was with reference to developing pay structures. However, even in this case, some employees in a few organizations do make these kind of decisions. Overall, organizations which involve employees in compensation tended to do so by having them share opinions and make recommendations to managers or HR specialists. The managers and specialists then used this input to formulate decisions on compensation policies and procedures.

Organizational practices vary widely in terms of how employees are involved in different aspects of compensation design and management. Examples of the breadth and extent of this involvement, based on the results of this study and the author's experience as a consultant, appear on pages 4 and 5.

Reasons Organizations Do Not Involve Employees. A total of 156 organizations, or about 54% of the sample, indicated they do not involve employees in any aspect of compensation system design or management. No single factor predominately accounted for the lack of involvement. Management's resistance to give up control was cited most frequently (over 37%), followed by the perceptions that employee involvement was too time consuming, other priorities were higher, and employees' skill levels to be involved were deficient (about 25% each). Among the respondents who do not involve employees, about 10-15% of them cited the following reasons: a) goals for employee involvement are unclear, b) rewards to employees for their involvement do not exist, c) it is too difficult to decide which employees to involve, and d) management lacks the skills to involve employees. Contrary to "conventional wisdom," only 1.3% of these organizations indicated that they avoid involving employees in pay issues because of union opposition or because employees do not want greater involvement in decision making.

A few organizations indicated additional barriers. These included the belief that compensation is solely management's responsibility or the corporate culture is incongruent with employee involvement. A small number of respondents indicated they either are in the start-up phase of an organization-wide employee involvement process starting with middle managers or have never considered involving employees in the first place. Statistical analyses revealed the reasons for lack of involvement did not differ by size of company nor by type of industry.

Examples of How Organizations Involve Employees in Pay Systems

Organizations involve employees in designing and managing compensation systems in numerous ways. This study reveals that practices vary widely in terms of the nature and extent of involvement and how it is fostered. The examples below describe only some of the many options that are available to organizations which are contemplating the initiation or enhancement of employee involvement in their pay systems.

- *Prepare Job Descriptions*--An employee writes a draft of the document and submits it to his/her immediate manager for review and approval.
- *Identify Job Requirements*--A manager requests each of his/her direct reports to compile a detailed listing of the knowledge, skills, and abilities needed to perform their jobs satisfactorily. After reviewing these, the manager incorporates the employees' lists into the final document.
- *Determine Performance Measures*--Groups of employees in the same position reach consensus on how their performance should be measured accurately and fairly. These suggestions are then incorporated by management in reaching the final decision.
- *Determine Compensable Factors*--A group of incumbents whose jobs are to be evaluated on the same system is formed. The group decides on the factors to be used to measure the relative worth of jobs.
- *Conduct Job Evaluations*--A vertical slice of incumbents (either the same group as above or a different one) measures relative job worth using either a system already in place or one designed

within the organization. Typically, individuals do not evaluate their own jobs but may do so with jobs at or below their level.

- *Obtain or Analyze Market Data*--A task force of people in non-exempt jobs designs its own local wage survey. A group of individual contributors in exempt jobs analyzes pay survey data and presents its findings and recommendations to management.
- *Develop Salary Administration Policies*--Guidelines for merit and promotional increases are developed by an ad hoc committee composed of managers and employees.
- *Determine Jobs or People Eligible for Pay Programs*--A joint employee-management committee recommends the jobs to be included under a new skill-based pay plan. A design team determines who is eligible to participate in a re-configured incentive program.
- *Determine Pay Levels for Various Performance Levels*--A team of employees who will be under a new group incentive system provides management with their suggestions on what percentage of a bonus pool should be paid to the team for delivering expected and greater than expected performance.
- *Determine Compensation Mix*--An individual employee gives his/her manager their ideas on how much of their total compensation package should be base versus variable or at-risk pay.
- *Develop Pay Structures*--A job evaluation committee assigns each job to grades. Then, based on market data and the organization's ability to pay, the committee suggests the pay ranges assigned to each grade level.

Major Conclusions

Taken collectively, the results of this study can be distilled into 3 major conclusions. These are:

1) The overall extent of employee involvement in compensation systems is moderate.
2) In general, the nature of this involvement tends to be informal rather than systematic.
3) Neither the line of business nor the size of the organization appear to be factors in the nature, extent, and method of employee involvement in pay systems.

Implications For HRD Practice

What do the results of this study suggest for organizations which are contemplating increased employee involvement in their compensation systems? What issues should organizations and HRD professionals consider as they explore the possibility of involving employees in the pay arena?

In response to these questions, the following broad guidelines are offered. They are based upon the results of this study, other related research, and the author's work with numerous organizations which decided to involve their employees in compensation practices. Case examples accompany each guideline. These are intended to illustrate how organizations have successfully implemented employee involvement in the design and management of reward systems and what HRD professionals can do to facilitate that process.

1. Genuine commitment from top management is necessary. Employees will readily tell the difference between sincere and superficial attempts to increase their involvement in any business practice. Compensation represents a significant investment for most organizations. Therefore, involving employees in pay systems is a very tangible and potent way of demonstrating top management's genuine desire to practice participative management. Involving employees in compensation is both a literal and figurative means of conveying the organization's willingness to "put its money where its mouth is."

An SBU of a *Fortune* 50 manufacturer embarked upon a long-term strategy to involve employees in all aspects of the business. Cross-functional teams were formed to address issues and make recommendations to top management. One team was charged with examining and improving all of the SBU's compensation plans. From the outset, the head of the SBU initiated continuous dialogue with the team to assure clear two-way communications were maintained. In particular, the executive asked the team how he could be a helpful resource and then made sure he responded to each and every request made by the team. In effect, the executive was a key player in the involvement process rather than merely a cheerleader on the sidelines.

2. ***Involvement is relative rather than absolute.*** This study demonstrated that employee involvement in compensation can range from providing opinions to having complete decision making authority. Initiating an involvement effort or enhancing the extent of employee participation does not equate with "giving the store away" (Kahnweiler, 1991a). The results of this study show that there are many opportunities to increase the extent of employee involvement in compensation program design and management while retaining management's control of these resources.

A division of a *Fortune* 500 service business decided to examine the internal equity and external competitiveness of its non-exempt pay practices. A self-managed team of non-exempt employees was formed to conduct various analyses and made recommendations to management. From the start of this project to its completion, management made it clear to both the team and the entire organization that it would retain the ultimate authority to approve, revise, or reject the team's suggestions.

3. ***Focus on process as well as product.*** How employees are involved in compensation is as important, and perhaps more critical, than the outcomes they produce as a result of being involved. For example, some organizations have elaborate and sophisticated gainsharing plans that were designed by management with little employee input. The problem here is that the organization ends up with a pay system designed to increase employee involvement but the actual process of putting the system in place was a traditional, top-down approach. Employee participation in compensation should be sought at the outset of any involvement initiative and continue throughout the life cycle of any particular project.

The human resources executive and top management of a manufacturing company with 1000 employees agreed that their pay plans needed an overhaul. However, before they implemented any of their ideas, they asked a sample of employees representing all levels and functions for input. Specifically, the employees were asked for their ideas on what the problem was, how it manifested itself, and what should be done about it. Asking employees for their input on the identification of the problem was a key aspect of the involvement process and ultimately resulted in pay systems that were more effective for the organization. Often, managers will say to employees, "Here's the problem. We know what it is so we don't want your input on that--we just want your input on how to solve it." However, when management asks for employee input on the analysis of the problem, it conveys the message that the organization is serious about employee involvement. It also tends to result in more effective solutions.

4. ***Pilot an involvement effort.*** Many firms have found that it makes sense to start the involvement process in one area rather than trying to implement it throughout the organization at the same time. Those areas that seem ready to embark on the involvement process generally have the best chance of succeeding at it--and nothing breeds success like success. While this strategy may create perceived inequities in those areas not chosen as pilot sites, it is important to achieve successes early in the involvement process. Otherwise, skepticism or discouragement can flourish and become insurmountable down the road.

A health care organization decided to increase employee participation in its job evaluation process. When it began this process, it chose its auxiliary services operation as its pilot site because management-employee relations were more amicable compared to other parts of the hospital. These other functions within the hospital became more willing to consider involvement by employees in the job evaluation system after auxiliary services employees and managers experienced some success with it. While this shift in attitude certainly did not occur overnight, it is doubtful that it would have happened at all if the hospital had chosen a "full throttle" approach to employee involvement.

5. ***Expect resistance from managers.*** Despite the fact that employee involvement is relative and not absolute, managers below the top level often perceive it as "a take away" and will therefore resist it. This study suggests that management's perception that involvement requires that they give up control is a key obstacle to employee involvement in compensation. Executives and HRD professionals need to remember that such resistance is normal. In fact, because

compensation is such a critical issue, there should be cause for concern if management did *not* resist the idea of involving employees in it. When signs of resistance surface, it is important to accept rather than deny or minimize them. Resistance from managers means that they are dealing with issues which are very important to them. At the same time, it is important for HRD professionals to educate, remind, and/or convince managers that the main driver of employee involvement, whether in compensation or any other area, is to improve business performance. When viewed in this context, managers who are reluctant to involve employees in pay systems may start to become attracted to the concept.

In the SBU depicted in the first example, managers on the team were not accustomed to asking rank and file employees for their opinions on how to improve business practices much less consider these opinions. The managers' resistance was expressed in a number of ways, such as showing up late for team meetings, trying to dominate discussions, and not listening to employees' ideas. It was important that these behaviors were allowed to be expressed even though they were somewhat disruptive to the involvement process. Having "all of management's cards on the table" was necessary in order to work through their resistance.

*6. **Expect resistance from employees.*** If senior managers, HRD professionals, or others announce that employees are expected to be more involved in the organization's pay systems, it is likely that they will resist the idea. We all resist change to some degree, even when it is in our enlightened self-interest to change. If the organization has had a legacy of adversarial management-employee relations, employee resistance can be expected to be a given. And, as most of us know, it is safer to be led than to be involved because then we can blame others (i.e., employees can blame management) when things go wrong. As with managers, employee resistance to involvement should be expected and its open expression should be encouraged. Persistence is also important.

A high technology company with 16,000 employees had a long history of poor management-employee relations. The new CEO was committed to greater employee involvement throughout the business, including the improvement of its compensation plans. Not surprisingly, the more the CEO touted the need to radically alter "the way we do business with our customers, suppliers, and each other," the more skeptical and distrustful employees became. Greater involvement was seen as "another ineffective human resource program" at best and as "another management ploy to get us to work harder" at worst. The CEO and his staff, along with human resources managers, slowly yet tenaciously continued to elicit greater employee participation. It took about 10 years for employees to "come around." The main lesson here is that the reversal of deeply-held attitudes takes years to accomplish because it took at least that long to form and solidify them in the first place.

*7. **Focus on broad, strategic issues.*** As alluded to above, the least effective employee involvement efforts in general and in compensation in particular are packaged as programs or "employee relations flavors of the month." Employee involvement in compensation should support and reinforce an organization's overall shift to a more participative culture. Top executives need to take the strategic view when it comes to employee involvement in compensation because the process is really a transformation in the way compensation is designed and managed over the long haul.

A family-owned business employed 200 people. For years, the CEO managed the company like a kingdom and made all the decisions, whether they were important or menial. In part due to a massive turnover among his direct reports, the CEO decided that he needed to change in his management style (and thus the culture of his company) from highly autocratic to more democratic. Teams of managers and employees were formed to tackle various problems. Not surprisingly, during the first year of this dramatic shift, it was very difficult for this CEO to give the teams sufficient latitude to make decisions. However, when he was influenced to focus his attention on strategic issues facing the company, he reverted less to his old behavior of meddling in everyone's affairs. Ultimately, he concerned himself primarily with overseeing that the work of the various teams (including the one that dealt with pay issues) linked together and supported the strategic objectives of the business. The tactical, day-to-day operations were delegated to the members of the teams on an ongoing basis.

Implications For HRD Research

This study probably raises many more questions than it answers. Among the key issues to be addressed by further research are:

- Why do organizations choose to involve employees in designing and managing pay systems?
- When and under what circumstances was this initiated?
- How was it accomplished?
- Which approaches worked best? Why?
- Which were less effective? Why?
- How are "success" and "failure" in employee involvement measured?
- Are organizational size and line of business truly unrelated to the nature and extent of employee involvement in compensation, as found in this study? If so, what other demographic characteristics (for example, business life cycle stage, financial performance, market diversity, age of organization) are related?

It is hoped that continued research in this area will eventually lead to more rigorous empirical testing of specific, theory-based hypotheses.

Along with additional research, what organizations learn as a result of undertaking employee involvement in compensation can help to answer these questions. To this end, HRD professionals, compensation specialists, and line managers are encouraged to share their experiences (both positive and negative) with one another.

Conclusion

Compensation, when viewed as an isolated function, is considered by some to be part of HRM's role. However, this study is relevant to HRD research and practice for many reasons. Two major ones are: 1) employee involvement requires *substantial developmental interventions* at the individual, group, and organizational levels in order to succeed, and 2) numerous scholars and reflective practitioners have repeatedly called for the *integration of HRD and HRM systems* in order for any single HRD or HRM process to succeed.

Examples of the above two issues which seem pertinent to this study include linking relevant reward systems with management and employee development efforts, career development programs, and large-scale organizational change initiatives such as TQM, self-managed team structures, creation of a learning organization, and process re-engineering, to name but a few. HRD researchers and reflective practitioners who are interested in employee involvement may need to enhance their understanding and appreciation of how the involvement process fits (or *should* fit) with other HR systems, including but not limited to reward systems.

Advocates of employee involvement in compensation design and management claim that it would result in more effective pay systems. This is based on the premise that employees will contribute to improving their organization's pay systems if they are granted some responsibility and recognition for doing so (Lawler, 1990). These ideas have apparently not been subjected to rigorous empirical scrutiny. Nonetheless, they may be intuitively appealing to HRD researchers and practitioners. However, the results of this study suggest that many managers and compensation specialists are not yet willing to share some of their compensation system responsibilities with employees. Perhaps some of them would become more willing if HRD would become more involved in reward system issues.

At the same time, this study uncovered a critical mass of employees who *do* participate in the compensation arena. Some of these employees have significant responsibilities for formulating and improving pay systems. Such involvement is a powerful way of displaying an organization's authentic dedication to employee empowerment. Moreover, it can be a viable mechanism to optimize the return on the considerable financial investment organizations make in their human resources.

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Notes:

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Involving Workers in The New Learning Environment Required for a High-involvement Organization: The Workers' Perception

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To meet the new challenges of global competitiveness, organizations must dramatically raise performance and productivity. This requires substantial workplace reorganization combined with new worker skills and abilities. Such change must come broadly and strongly enough to break the old culture on the shop floor and create a new learning environment. Workers who are motivated to be actively involved in this new learning environment, can be the catalyst effecting the change to a high-involvement organization.

The parameters for competitive success have shifted to a new global marketplace in which resources are easily transferred or duplicated worldwide and low-skilled, low-wage workers are readily found. America's well-paid life-style can be maintained only if performance and production can be raised to a level equal with that pay and this can be done only with workplace reorganization and new worker skills and abilities (NCEE, 1990.)

This reorganization requires a transformation of the workplace that puts special demands on production workers. Workers are required to change their perceptions of their jobs, their work behavior, and the learning, skills and abilities they bring to those jobs.

In "high-involvement" organizations workers on the production floor are expected to be more flexible in work assignments, be responsible for work previously done by supervisors or inspectors, and become active members of decision-making teams. Edward E. Lawler (1985, 1986, 1992) found that worker participation and motivation are crucial factors in the success of workplace transformation. Workplace transformation requires workers who are motivated to be actively involved in a new learning environment. "People are motivated to perform an action when they perceive that the consequences of the action are favorable to them; that is, when they perceive that they will achieve goals or outcomes that they desire" (Lawler, 1986.)

This research centers on the fact that while workers are required to change the whole comprehension of their job, their work behavior, skills and abilities, there is little understanding of production-line workers' perceptions of these changes and its effect on motivation to become actively involved in a new learning environment. The primary focus was to examine, how production-line workers' perceptions of the transformation to a high-involvement organization and to training involved in that change, affect their motivation, participation, adaptation and learning.

This paper is based on an ethnographic study of workers who volunteered to participate in a training program at a manufacturing plant in transformation to a work cell arrangement and an effort to restructure the workplace into what Lawler (1986) has called a "high-involvement" organization. The specific focus is on acquiring an understanding of the learning experience and economic perspective of workers taking part in the organizational change. Data was collected through participant observation at the plant, in-depth interviews, observation of classes and shop floor activities, and from a focus group.

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The Need For A New Learning Environment

Trainer/engineer Don Riley explained the program he initiated at the Gansett manufacturing plant as part of that transformation:

> ...[In my job] I look at how we make things, introduce new technology and new products and machine tools into the company. ... I carpool with another project engineer. We started discussing some of the problems with new technology, lack of skills in the workplace, ... and I thought it was long overdue to do something.

There was a lot of frustration on the shop floor...." The workforce was evolving into "a bunch of button pushers" with all the technological knowledge found in only three or four people. "We had an awful lot of downtime because you can't be everywhere at once." It was obvious that something had to be done to get the operators involved in problem-solving.

Responding to an increasingly competitive global market, companies have moved to the development of a high-involvement organization, delegating decision-making to production workers on the shop floor. Production workers' roles have been broadened to include decision-making responsibilities and authority commensurate with proper training and skills. The transformation of an established industrial workplace is one of the most challenging ventures in human resource development today. It involves redefining jobs and recasting the work environment to become more competitive.

These changes mark a significant departure from the requirements and expectations of the old-style Taylor model, in which "Managers are the ones who are expected to think, coordinate, and control" (Lawler,1992, p. 26.) Firms are pressing workers to meet the special challenges of being better educated, thinking critically, working as members of a team, taking responsibility for problem-solving, and making decisions.

Conversion to high-involvement runs counter to the very basic message that has been given to workers and managers since the introduction of mass production. After decades of organization as a Tayloristic production line, the shop floor has developed a culture of its own. "Culture" is the pattern of basic assumptions developed as a group learns to cope with problems. When these assumptions work well enough to be considered valid, they will "...be taught to new members as the correct way to perceive, think, and feel (Schein,1985. p.9). In a mature organization, leaders cannot change culture on their own. They must listen, in order to involve the group in reaching its own insight into the need for change and become willing to participate in the change. "[I]n the end, cognitive redefinition must occur inside the heads of many members of the organization and that will only happen if they are actively involved in the process" (Schein, 1985. pp 324-5).

The Learning Experience at Gansett

For the workers who volunteered to participate in this training program learning is an evolving process, as plant needs change and workers' knowledge matures. Whatever their perceptions of education were at the start of the program, the Gansett trainees are now life-long learners with a "systems view of scholarship.

Education Not Training. While this research centers on workers in a "training program" the implications of the terms "education" and "learning" must be noted. Traditionally, much corporate training involves instruction in the simple tasks needed in a Tayloristic production process. Coping with the human element has always been an arduous facet of manufacturing; Taylor dealt with this by taking most of the human factor out of the job. Training is often an afterthought, done, informally on the shop floor, with little interest in any learning beyond acquisition of a required skill. Yet, if workers are to take their place in high-involvement organizations they must be educated far beyond this.

Now, the thinking is that the effective use of advanced manufacturing requires workers with skill, and also, understanding of the more generic concepts of the entire plant perspective, such as teamwork, and the development of learning skills. The question of what workers should learn is becoming increasingly difficult to answer as jobs become more complex and firms want more flexibility. Companies, such as Gansett, are quickly adding computer-controlled equipment, while at the same time giving operators more duties and expecting a great variety of skills. Workers must stay abreast of rapidly changing technology and cope with greater responsibility. On a visit to the Gansett shop floor an observer would see people many professionals might think off as riffraff running half million dollar CNC (computer numeric control) machines that turn rough casting and simple stock into complex finished product. It would be obvious that workers are learning techniques that have never been practiced on the shop floor before. The new training goal is to train workers to develop, as technology continues to change (Ashburn, 1986; Beard, 1991a; Beard, 1991b). Today, any "training" program must be judged in terms of empowering workers with direct responsibility for decisions affecting production and quality (Carnevale, 1991).

The Introduction of The Training Program to Gansett. The move from the simple, repetitive work of the mass-production shop floor to new technology and new work organization has forced the new commitment the training of production workers.

The popularity of talk about building a smart competitive workforce not withstanding, workers' perceptions gives a critical twist to the coming of the latest skill training to Gansett. There is a consensus on the shop floor that Gansett's management made a mistake and assumed that new production technology would reduce the need for operator skill. The production engineers and trainees see the opposite of that assumption as true. An engineer, studying with the advanced class, told this story of Gansett's move to training:

> They [management] thought CNC [computer numeric control] machinery would end the need for a skilled workforce on the shop floor and it doesn't. If anything, it increases it in certain areas.
> The CNC machine. ...its a wonderful tool but you need good operators. They're not just button pushers, they have to be able to diagnose problems.... ...know how to correct a problem and even get in and edit a program...

Willy, a machine operator with 15 years at Gansett and many more in other manufacturing environments, explained the company motivation for training in this way:

> ...they found that going to the outside ...they couldn't really get the people they wanted with the qualifications they wanted so they decided to go to the resources that they have in-house....
> ...if they don't continue with the Workforce program, with the education, somewhere down the road they're going to have serious problems....

The wisdom on the shop floor is that training has been forced up into the company. "It came from the floor up, not from the top down." In Don Riley's view:

> The need came from the shop floor, created with the help of the shop floor. I went [to the production workers] to find out just what to teach and where we wanted to go with the training. I got a lot of input from the individuals on the shop floor, who were running the processes at the time. They were the ones that badgered the living daylights out of their supervisors.

The Evolving Nature of The Learning. Don feels that training has been in a process of evolving as shop needs changed and knowledge developed. After three years, he feels "Now I'm at that crossing point with the training ...where are we going?" He wants to make sure that goals are very clear-cut so that everyone in the program, "...knows what those goals are and can achieve them." One thing he feels strongly about is that people comprehend that "...a better understanding of the world of machining" is not the final goal. "I want successful people."

The evolving nature of training at Gansett and the goal of personal success for the trainees is clearly seen in the newest development on the agenda. Don and another engineer have gone out and bought a course that will certify the graduates in CNC programming. The program will be offered to workers who have completed the advanced class. It will be run in a meeting room at Gansett but not on company time.

Don's personal objectives for this new course are interesting. "I want to give them something for the time that they have given me". Beyond that, the goals include: giving the trainees the opportunity to keep learning, improving ability on the shop floor and, one that seems most important, "...start using you human resources correctly ... or lose your skilled workforce." Don's idea is that if the workers' skill is not appreciated at Gansett they will have the credentials needed to move on.

Don's objectives were interesting in light of impressions acquired while interviewing, observing the training classes and visiting the shop floor. At this stage in their personal development, the majority of trainees want to keep learning. They have become "adult lifelong learners" with particular interest in what they see as their profession. John Dewey (1916) wrote; "Real education starts after we leave school and there is no reason why it should stop before death." In class, trainees were quick to offer both functional and hypothetical illustrations of the topic at hand. On the shop floor, machine operators were observed reading machine shop manufacturing magazines while "baby sitting" their high tech equipment or while on break.

A trainee in the basic class offered literature citations from trade machine journals. He noted that one article on cell working groups would be of particular importance, and would be useful in comparing the factory in the article with Gansett. He had read the journal "...after finding it on the foreman's desk." During class breaks and on the floor, trainees often wanted to talk about global competition and Japanese human resource use, referring to what they had read or seen on television. Public television and shows like "Sixty Minutes" were often cited as good sources of information. There was a great deal of interest in my investigation. Other trainees answered questions on their reasons for volunteering for the classes saying that they take any class offered. "You can never learn too much" was a common explanation.

A question I pondered was: "What happens to these people if there isn't any more to learn at Gansett?" Perhaps once you get people started down this learning track you have to keep giving them more to keep them motivated and challenged.

I shared with Don my concerns about what might happen to learning after the classes were over. He agreed and said that his professional career followed a path of moving on to another company whenever a job stopped offering new challenges and new technology to master.

A goal of the instructors is to give the trainees confidence on the shop floor. The students revel in that directed confidence. You can see and hear joy in their learning during the class. They like to tell Don what has been going on, on the floor and how what they learned works.

Matt shared this story with fellow members of the basic class during a break:

> I'm getting the knowledge that, I don't think there were many people in here who were freely giving. I can give you an example .... It helped me a whole heck of a lot. We kept having these cap problems...ever since I've been in this department...13 years. Now, Don is telling us that, through studies, it doesn't matter if you've got...80% thread or 60% thread, the pull-out power is the same. So as soon as I learned this, I changed all my drill sizes, ...and never had a problem with the caps again. Now we can stop going by trial and error.

Don builds on the trainees interest in their own work by building plenty of practical application into his teaching. In the older NC (machines controlled by punched paper tape) area, they were having problems with tapping aluminum magnesium. "Even though it was the basic class, I knew one of the things I had to do was solve that problem for them." Class time was used to teach the students from that area how to determine the correct way of drilling and tapping aluminum magnesium and the correct tooling. "They haven't had a broken tap in probably nine months, where they used to break a tap every 10-11 pieces." Shop talk is that the foremen "...know that they can knock down their loss time on jobs by 80-90% just by running it through the trainees."

An important part of Don's training philosophy is that people from the floor, engineers and production workers, should do the training. Don sees very little respect for the practical application of training run by the personnel department. From his perspective, the introduction of work cells as production units at Gansett made that clear to management. "What the cells did was sell the idea that the people who should be doing the training are the people who introduced the technology, not the personnel department."

Training Style. The old training of operators involved "do as I do" training, with no theory or explanation. This training, which involved disciplining workers in simple, repetitive tasks, was typical of that done to support a Tayloristic production process. There still is some of this training going on at Gansett and the program being studied has some procedural training in it.

Don compared his training classes, which teach both practice and theory to the old teaching. Training was done by a worker or foreman:

> We had pretty much 'do as I do' type training, with someone who may, or may not, be qualified to operate the machine correctly, showing another individual, who probably has never seen the machine before, and has no understanding of its workings, how to run it without hurting himself.

Hands-on training, problem-solving and a variety of operating skills are seen as important by the trainees. Learning applications seem of special importance to less experienced trainees. Sue, a young woman in the basic training class who has a packing job, said; "If you could actually see this working the way he's telling us, I think it would have helped me, anyway, a lot."

Procedural training has become very individualized and specifically, problem-oriented within this program. Malcolm S. Knowles (1984) asserts that the best environment for adult learners is a non-authoritarian, less formal, cooperative atmosphere: the instructor's role would be that of facilitator, catalyst and guide, in a process built around what the learners feel they need to know (Bell, 1989; Knowles, 1984, 1989a, 1989b; Zemke & Zemke, 1988). This would be an apt description of how Don Riley runs his training program.

When asked about the idea that practical application was a very important part of the classes even when theory was the topic, Don agreed and gave this illustration. The start-up of the cell work organization provided Al, the engineer who introduced the cells to Gansett and Don, with a chance to offer practical conceptual skill training. Under the guise off having to go to the cell to work on a CNC program, they began training on the shop floor. Don told this story:

> We spent almost full-time for three months working with the two operators and really bringing them up to speed. We were teaching what a good drill looks like, why different drill geometries, why you use this end mill as opposed to another end mill, what's a 20% carbide insert, a lot of things were not associated with their job, but we wanted to make these people knowledgeable, as quickly as possible.

Don is very proud of the fact that "They're both lead people now in their area." "Lead" production workers are designated by the company as resources for information and assistance for others on the shop floor.

The literature raises important questions regarding positive transfer of training to the job. The obvious rationale for worker training is the belief that students will effectively apply the understanding, skills and views from class to the shop floor. However, the degree to which this takes place is often not clear. The degree of learning transferred to the job is said to vary with both training style and the acceptability of the new learning within the company and within the trainee's own department (Baldwin & Ford, 1988). However, it is clear that Don's training style and the workers acceptance of the new learning generates a high level of transfer. In those departments where Don and engineers working with the training have clout or where the foreman is approving, that learning is effectively applied: in other departments it may not be.

The New Learning Environment

The workers at Gansett are changing their job perceptions, their work behavior, skills and abilities, there is motivation to become actively involved in a new learning environment.

Lifelong Learning. Although learning is sought for a variety of reasons, the customary judgment is that, for adults, learning is usually not sought as its own reward. Learning is most often a means to an end. Yet, many adults do study for the sake of learning itself (Zemke & Zemke, 1981; Merriam & Caffarella, 1991). Among this group of self-selected trainees, learning for learning's sake and for gaining credentials for financial gain or, to help land a new job after being laid off, are of about equal weight as reasons for taking part in the training. Lifelong learning, the practice of continuously and purposefully acquiring knowledge formally or informally, in order to maintain or improve an employment edge or for personal improvement, is characteristic of the Gansett trainees (Schfritz, 1988.)

Sharie was a ninth grade dropout because "...school was boring and didn't have anything to do with life." After leaving school, she became pregnant and married. After two more children, Sharie had become weary of household management. Her brother-in-law worked at Gansett and suggested she get a job there, as a packer. Work seemed to kindle an interest in learning for her. Sharie completed her GED through a program at Gansett and worked her way into Don's training program . She is now a coordinator who takes responsibility for much of the production planning in her department. In an interview, she talked about hurricane Andrew's effect on the demand for her department's products. Although the coming of Fall usually meant a cutback in hours worked in her department, Sharie convinced the foreman to keep production levels up because of rebuilding that would be taking place. Sharie also trains operators on the shop floor. In the Gansett training program, she joined in helping build what looked a lot like Peter Senge's "Learning Organization" "...where people continually expand their capacity to create the results they truly believe in (Senge, 1990a. p. 3.)." She is in the program:

> ...because you never know too much. It's always good to learn something. I know my job, I know what I'm doing, but you can get stagnant doing things. I always volunteer to learn something new. You never know. It'll always come in handy sometime. Life doesn't end in that department. There's always a second step to go.

There is some element of learning for learning's sake in the practice of workers who are doing well in piece work. They will take the training and apply the proficiency learned to their job, but resist moving to cells which are seen as lower paid. Matt, a student in the basic class, claimed that he had no interest in going into a cell to work. However, he loved to talk about using the power his new knowledge gave him in his current job. He clearly felt that the class had given him more practical understanding of his work than his foreman had. The foreman is impressed with Matt's learning. Matt said this about what training had done for him:

> Now I just go right up to the methods engineer and say, "Look, I have this problem...and I think...." ...I'm sure if I point it out to him he's going to say, "Yeah, you're right."

Trainees are pleased about using their new skill and understanding on the job. Mary Jane said:

> I think most people realize that you have to repaint and re-look at things because they are done differently today. You have to keep up with it. [This class]...is related to a lot of things I deal with. ...I help and teach certain aspects of it, which is fun, a lot of fun because you really feel responsible....

The feelings and reasoning of these Gansett trainees exhibit what adult education theory infers. Building or maintaining self-esteem is often a strong motivating factor, along with job advancement. In addition, the application of learning to relevant problems and integration of new and already known ideas is important, (Zemke & Zemke, 1981; Merriam & Caffarella, 1991).

When Bud was asked in what way the training had helped him most he said, "I communicate better with the engineer directly.... You can take an engineer and sit down, understand what he is saying, and the engineer is going to understand what you are trying to get across." However, when asked about decision-making he replied, "Now I can explain a little more, in detail, what the problem is, and it does work, but to saying you have more decision-making in the area, no." A key facet of job enrichment is responsibility combined with the supporting authority. To the extent that Bud's perception is typical of practices in his department there is a barrier between his learning and its application. Don has complained of such barriers.

Theory, as well as personal experience, teaches that adults have an aversion to the risk of new behavior before peers. Yet, they openly bring a great deal of experience to class, where sharing it with fellow students greatly advances learning. Social and cultural influences play a crucial role in adult participation and success in formal education such as corporate training (Zemke & Zemke. 1981: Merriam & Caffarella, 1991). These points were obvious from observation of training class interaction at Gansett. Training classes provide a source of social relationships. Sue, coming from a very low-skill job, credited a skilled worker in her department with talking her into volunteering for the program. She had this to say about her fellow students:

> I don't know any of these people here, but they're all...a lot of fun. ...and they don't knock you down, although I feel stupid if I ask questions. ...they're always willing to help...explain.

Bo talked about more skilled trainees who brought sample problems to class from the shop floor:

> ...that's good...somebody [with less experience] they ask the question any one of us will answer them.... I've never seen where somebody's "I'm better than you. Why should I bother?" Everybody has been very cordial.

On the shop floor, the training class camaraderie was obvious. Visits to one work area always yielded recommendation of where other classmates were working and assurance that they would be glad to show me around their area and demonstrate their job. Whenever the conversation turned to the class, comments were enthusiastic and respect and appreciation for Don and his style were expressed.

Trainees contended that they do not talk much about the training and their new skills with workers not in the program. Although there is some talk about support from friends and family, that was minimal. Both the impetus and enjoyment associated with training and new skills is self-motivated. Trainees acquire their feelings of satisfaction from their own work, but also from others in the program or those who have gone through it. There seemed to be a feeling that those outside the program did not appreciate or were not interested in hearing about the training. Some trainees feel that Gansett people, outside the program, have a negative attitude towards it.

Systems Learning. Peter M. Senge makes the point that companies and all human endeavors are systems, not unlike rainstorms and other natural designs. As a part of the lattice, it is very hard for the individual to see the whole pattern, to see beyond an isolated part or specific task. Trainees are pleased with their learning and the use of their own skills. They also like using their training as a source of responsibility and authority and to see their job as a part of Gansett. For Senge, "systems thinking" is the integrating skill that fuses other skills together. Interviews and observation revealed that, for many of the trainees, learning was arousing that kind of thinking.

Bo talked about the fact that production issues had replaced sex and sports as break time topics for trainees:

> ...they're allowed to use their minds a little bit, kicking the cobwebs out.... ...these guys love this course, jogging and getting their minds active. They say, "Let me look and see what I'm really doing" versus "I'll just do it" They've caught a lot of things...that should be straightened out, where, without this course, they never would have never.... [Before] it was " If it works, it works." Now it's, "It can be better why do it this way?"

Gansett has a reward program in which employees win by suggesting production improvements and solutions to problems on the floor. The members of the cell that Dave works in, all trainees or graduates, spend their lunch time working on proposals to submit. When out of issues in their own cell, they visit other departments looking for problems to work on.

Workers in the program are pleased with their knowledge and the use of their skills and with working and studying with others who now have similar understanding. In talking about learning, they fuse their skills with the change at Gansett and with the change in the global economy. While there is an expected financial component to the seeking of knowledge, they also want to learn for learning's sake.

Rev. William T. Cunningham, the founder and executive director of "Focus: HOPE", a Detroit human rights organization that has become a bench-mark for modern workforce development, writes: "Training has to prepare a work force to make change happen" (Albert, 1991). Gansett's training program will have to be judged on this kind of standard.

Summary and Conclusions

The transformation of an established industrial workplace is one of the greatest challenges to human resource development today. It marks a most significant departure from the requirements and expectations of the old-style Taylor model. Conversion to a high-involvement workplace runs counter to the very basic message given to workers and managers since the introduction of mass production.

Workers connect their willingness to accept and participate in this workplace transformation to their views of the causes and effects of the change. Their learning is an evolving process, as needs change and knowledge matures. The trainees, in this program, are now life-long learners with a "systems" view of work.

The effective use of advanced manufacturing requires workers with skill and also understanding of the more generic concepts of the entire plant perspective, such as teamwork, and the development of learning skills. The firm is giving operators more duties and expecting a variety of skills.

The trainees embrace empowerment, responsibility and learning. The drive of these volunteer trainees for new skills and learning is self-motivated. They are pleased with their learning as a source of capability and influence, and with their job as a part of a system. They integrate their learning with the changes at work and with the change in the global economy. They seek learning for the financial component but they also want to learn for learning's sake.

"If we don't pick up on our manufacturing skills, we'll be left behind.... ...won't be here twenty years down the line unless we smarten up." This is a view of today's labor market reality from the perspective of a woman in the training program. The trainees show great interest in issues of income, job security, company policy and workplace organization. They think about and talk about Japanese production and management methods along with the broader issue of the firm's and nation's competitiveness. The participants in the training program understand that their economic reality depends on the success of the company's transformation endeavor.

Workers express multiple motivations for learning and taking part in the workplace transformation. Incentives range from earnings and personal respect to national economic well-being. Managers and scholars should keep this multiplicity of personal reasons in mind when promoting or studying organizational change, with an eye to advancing workers skills and involvement in their jobs .

Some findings from this research valuable to those using training to facilitate workplace transformation:

- In the transformation to high-involvement transformation, learning is an evolving process.
- The trainees want to keep learning. They are "adult life-long learners" with special interest in what they see as their role in a profession and in a system.
- There is a desire on the part of the workers to be more directly involved in the change in their work environment and to have management be more appreciative of their perceptions, knowledge and interest.
- Those involved in the changes find ownership in originating what they see as a grass roots effort.
- Workers see work reorganization and high-skill training as meeting their own needs and demands.
- Workers see training and learning as personal investing, but they tie the need for that investment to changes in the global economy.
- Workers, involved in the change, want to be recognized and rewarded based on the contribution their new skills, abilities and responsibilities yield.

These findings concur with research on what is significant in breaking the culture of a mature organization (Schein, 1985.) Production workers' education, which becomes part of a new learning environment can be the catalyst effecting the change to a high-involvement organization.

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What Do First-line Leaders Need to Succeed?: Identification and Validation of Competencies of First-line Leaders in High Involvement Organizations

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Increasingly, organizations are seeking competitive advantage by adopting "high involvement strategies." As organizations make the transition to these methods, however, supervisor resistance increases. Supervisors are not rewarded for helping teams succeed, nor are they provided with the training necessary to succeed. This study examined the issue of how to identify and validate the competencies of first-line leaders in these organizations. A literature search, focus group discussions, and surveys yielded a list of eight competencies.

A significant shift in the management paradigm is taking place in many North American businesses. Large numbers of organizations are taking a new road to increased productivity by discarding old, hierarchical management methods in favor of "high involvement" strategies (e.g. teams, TQM, peer review). This shift is taking place because of a number of factors, not the least of which is competitive pressure from other parts of the world (Reich, 1988). Schlesinger (1983) has documented other forces moving companies toward high involvement methods: the increased education level of entry-level workers, the increased aspirations of these workers, increased managerial concern for productivity, and a growing belief that greater worker participation will lead to increased worker satisfaction. In a survey of 845 line managers, Industry Week and Wyatt Co. (Moskal, 1991, January 21) found still more forces encouraging this shift: the need to increase employee commitment; encourage innovation; push accountability downward. Changing employee values and corporate cultures, the need to improve employee retention, and reduce management layers were also cited as reasons why many organizations are looking to new methods for managing their businesses.

While these forces are pushing organizations to change, however, countervailing forces are standing as barriers to this change. Supervisor and manager resistance to high involvement methods is one of the greatest of these barriers. Walton and Schlesinger (1979) documented three significant supervisor-related barriers: the skills needed by supervisors to succeed in the new high involvement organization are consistently underestimated; adequate skill development is not provided for supervisors trying to make the transition; and reward systems fail to tie supervisory evaluation to team development. In addition to failing to give adequate support to supervisors in organizations changing over to high involvement methods, Harrison (1992) found that supervisors are frequently left out of vital phases of the implementation process. In Harrison's survey of 30 companies, 17% of the supervisors responding said they were not involved in the implementation of high involvement methods, while 23% said they were involved only in the implementation of the change, not in the planning of the change. Klein (1984); Manz, Keating, and Donnellon (1990); and Lawler (1990) have all reported similar reactions to the installation of high involvement systems.

This paper will examine the question: What do first-line leaders (supervisors, leads, foremen, team leaders) need to succeed in a high involvement organization? To answer this question, characteristics of high involvement management methods will be described. The paper will then proceed to outline a research project sponsored by Employers Association, Inc. of Minneapolis, MN. Methods of this project and the results of the project will be described. Finally, conclusions and implications of the study will be offered.

Characteristics of High Involvement Management

Mohrman, Ledford, Lawler, and Mohrman (1986) have stated that the high involvement "paradigm has not yet become a well-established or completely coherent alternative to the traditional management paradigm" (p. 190), and is, therefore, difficult to define. The term "high involvement"

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is often defined in relation to other management practices. Mohrman et al. (1986) related high involvement to "quality of work life" (QWL), "employee involvement" (EI), and "sociotechnical design." They cited six tenets of the high involvement paradigm. The first is that power should be shared with the lower levels of the organization. Second, they stress the ". . .importance of open communication in organizations and [the movement of] operating information to lower levels" (p. 191). A third foundation of the high involvement paradigm is the development of skills and abilities of workers. In a high involvement organization, the mission of training goes beyond giving workers skills for their immediate job. In addition, workers are cross-trained in the jobs of their peers as well as in some management skills: interviewing, conducting performance appraisals, disciplining inappropriate behavior. A fourth tenet of the high involvement paradigm is that rewards are based on organizational performance and should be awarded to all levels of the organization, not just the executive level. A fifth tenet asserts that "stakeholders" in an HIO include customers and employees, as well as the traditional stakeholders, i.e. "owners." Sixth, the HIO strives to design all of its subsystems--training, work design, rewards, information, and so on--so that all of these subsystems work in concert. This is an important point of distinction between high involvement organizations and organizations which use selected employee involvement tactics. The high involvement organization recognizes that an employee involvement tactic, (e.g. self-directed work teams), can be undermined by subsystems which are not designed to increase employee involvement. For instance, the compensation system in the organization may encourage competition between employees instead of cooperation, thus blunting the involvement benefits of the team approach. In the high involvement organization, subsystems are focused on motivating workers, giving them the information they need to do their jobs, designing work that is motivational, and giving workers the autonomy they need to do their jobs.

A synthesis of these perspectives on the high involvement organization yields these fundamental defining characteristics of a high involvement organization:

° All subsystems of the organization should be designed to maximize worker motivation, ease information transfer, and flexibility to meet the demands of the environment.
° Rewards for work should emphasize the intrinsic value of the work. Monetary rewards should be based on organization-wide performance, and should be distributed as widely as possible within the organization.
° Information must flow freely from the environment into the organization and from one part of the organization to another.
° Self-regulation of oneself and self-leadership of the team is essential.
° Power and authority are distributed throughout the organization based on practical, not bureaucratic, principles.

Operationally, high involvement methods include combining a wide variety of innovative management methods into an integrated system in which all methods support each other. These methods typically include: annual performance appraisals, in which there is substantial employee input; career counseling; suggestion systems; experiments using employee ideas for system improvement; "state of the business" meetings; education for employees on how the business is measured; cross-training; information exchange meetings; direct feedback from customers to employees; feedback from employees to vendors and suppliers; employee-made operating decisions; employee participation in hiring decisions (Lawler and Mohrman, 1989). In a survey conducted by the Association for Quality and Participation (1993), 711 members of the association reported that the use of these and other practices ranged from 53% ("autonomous work groups") to 3% ("peer reviews").

As an organization implements these high involvement methods, first-line leaders ask, "What is left for me to do?" Walton and Schlesinger (1979), and more recently Lawler (1988, 1990), have documented that, as organizations shift from hierarchical management to high involvement methods, more responsibility is placed in the hands of teams. Sabier (1990) has extended this trend to the point that, in organizations with extensive use of high involvement methods, traditional supervisor functions of hiring, firing, delegating, training become functions of the whole work system, not just a class of workers. In such a transition, the role conflict of the supervisor, who has traditionally been "caught in the middle," becomes even greater. The results of this study will suggest some new directions for supervisory work and development.

Methods and Results

This study focused on the questions, "What are the competencies needed by first-line leaders in high involvement organizations?" and "Is there a difference in perception of these first-line leader competencies among first-line leaders, their employees, and their managers?" To answer the first question, a three phase process was followed: (1) literature search; (2) focus group discussions; (3) surveys. To accomplish the first two phases, a subject matter analysis (Swanson and Gradous, 1986) was conducted to gather information from the high involvement literature, as well as from companies actually using high involvement methods. Fourteen articles from the literature were identified which listed discreet competencies of first-line leaders. A preliminary synthesis of these articles yielded seven competencies. The researcher then contacted sixteen companies which had received site visits from the Minnesota Council for Quality within the previous three years as part of the selection process for the Minnesota Quality Award to determine their willingness to participate in the study. Five companies agreed to participate by making groups of employees available for focus group discussions of first-line leader competencies. These focus groups generally had 8 to 10 participants, at least 50% of whom were first-line leaders. Each focus group was asked to generate lists of duties and tasks of first-line leaders in their organizations, the outputs of the first-line leaders job, and the knowledge, skills, and abilities needed by first-line leaders to do their job. The focus groups' lists were compared with the lists found in the literature and a final list of eight competencies was developed:

Boundary Management Skills- the ability to establish and maintain healthy boundaries between team members and between teams.
Human Resource Management Skills- the ability to carry out management duties- planning, organizing, controlling, staffing, delegating, evaluating performance- and teach others how to carry out these duties; the ability to analyze the skill and career development needs of others; the ability to support the process of creating, implementing, and evaluating training programs.
Inclusion, Affiliation, and Integration Skills- the ability to help employees feel included in the business of the company; the ability to build strong ties of loyalty between employees and the company.
Mentoring Skills- the ability to encourage workers to use essential elements in self-management.
Personal Qualities- flexibility, trustworthiness, endurance, willingness to admit that one may be wrong, patience, sense of fairness, resiliency, realism, up-beat attitude, organization skills.
Quality Skills- knowledge of quality processes, including problem-solving, statistical process control, the use of Pareto diagrams, action planning, and evaluation of quality improvement projects.
Support Skills for Innovation and Change- the ability to encourage, solicit, and implement employee-generated ideas of system improvement.
Team Facilitation Skills- the ability to form and support teams in the workplace.

Phase Three (Survey) was accomplished by asking six companies to distribute a four page survey to a randomly selected group of their employees. Three levels--first-line leaders, their employees, and their managers--were to be represented. The results of the surveys are presented in Tables 1 and 2. To answer the second question of the study pertaining to different perceptions of the first-line leaders job, a fourth phase (Analysis) was carried out. This phase involved conducting an ANOVA of the survey results to determine if there were significant differences in the perceptions of importance and skill needed among the survey groups. Using a criteria of $p < .05$, the survey results showed that the three groups did not have different perceptions of "importance," except in the category of "Support Skills for Innovation and Change." First-line leaders rated this skill significantly more important than the other two groups. As to perceptions of "skill needed," first-line leaders rated "Mentoring Skills" and "Team Facilitation" skills as requiring significantly more skill than the other two groups rated these skills.

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Table 1

Importance Ratings of Eight Competencies of First-line Leaders

Management	(n=23)	First-line Leaders	(n=64)	Employees	(n=206)
Personal Qualities	3.96	Personal Qualities	3.81	Personal Qualities	3.78
Mentoring Skills	3.73	Mentoring Skills	3.67	Mentoring Skills	3.56
Quality Skills	3.48	Support Skills for Innovation and Change	3.66	Human Resource Management Skills	3.55
Boundary Management Skills	3.44	Human Resource Management Skills	3.66	Inclusion, Affiliation, Integration Skills	3.54
Human Resource Management Skills	3.44	Quality Skills	3.58	Support Skills for Innovation and Change	3.49
Inclusion, Affiliation, and Integration Skills	3.30	Team Facilitation Skills	3.52	Boundary Management Skills	3.43
Team Facilitation Skills	3.26	Inclusion, Affiliation, Integration Skills	3.52	Team Facilitation Skills	3.43
Support Skills for Innovation and Change	3.22	Boundary Management Skills	3.45	Quality Skills	3.42

1=Not at all; 2= Minimal importance; 3= Somewhat important; 4= Very important.

Table 2

Skill Level Needed Ratings of Eight Competencies of First-line Leaders

Managers	(n=23)	First-line Leaders	(n=64)	Employees	(n=206)
Personal Qualities	3.91	Personal Qualities	4.03	Human Resource Management Skills	3.93
Mentoring Skills	3.91	Human Resource Management Skills	3.94	Boundary Management Skills	3.82
Team Facilitation Skills	3.82	Mentoring Skills	3.92	Inclusion, Affiliation, Integration Skills	3.78
Human Resource Management Skills	3.74	Support Skills for Innovation and Change	3.84	Quality Skills	3.74
Inclusion, Affiliation, and Integration Skills	3.74	Boundary Management Skills	3.82	Team Facilitation Skills	3.72
Support Skills for Innovation and Change	3.65	Quality Skills	3.80	Personal Qualities	3.71
Quality Skills	3.61	Inclusion, Affiliation, Integration Skills	3.80	Mentoring Skills	3.57
Boundary Management Skills	3.61	Team Facilitation Skills	3.78	Support Skills for Innovation and Change	3.57

1= Basic; 2=Basic to Intermediate; 3= Intermediate; 4= Intermediate to Advanced; 5= Advanced

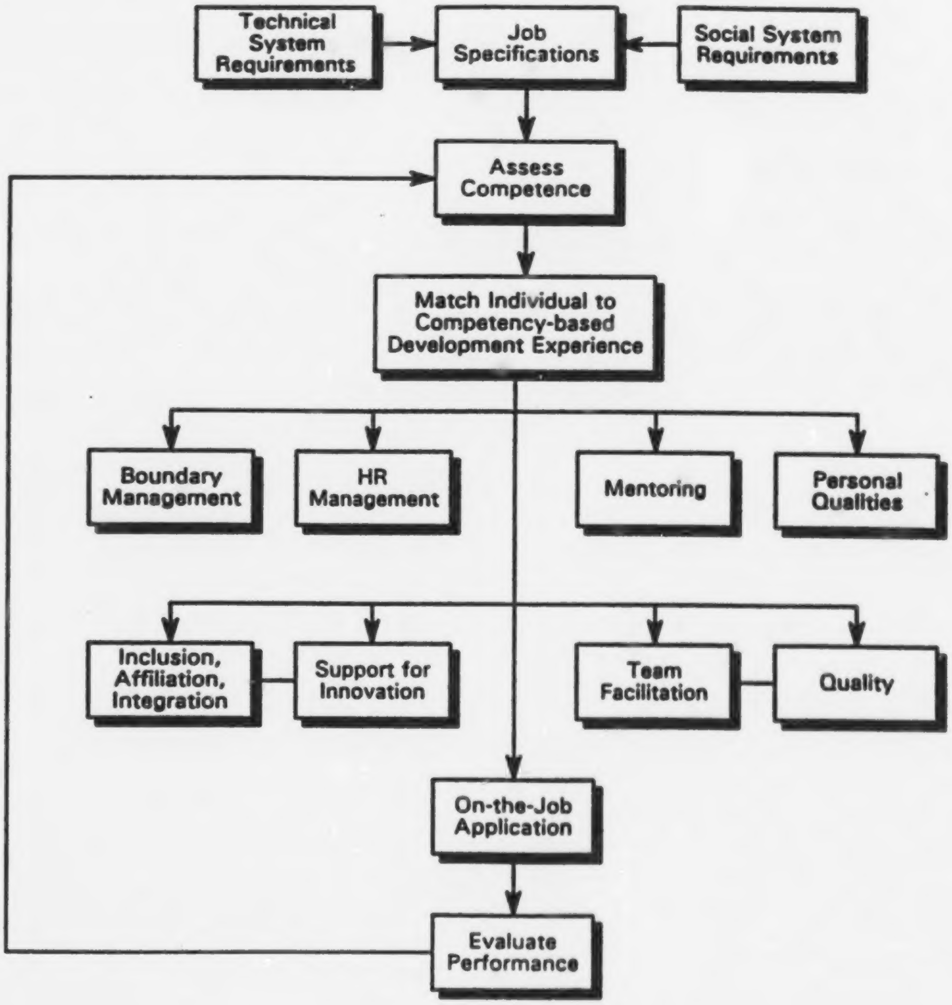
Technical System Requirements
Job Specifications
Social System Requirements
Assess Competence
Match Individual to Competency-based Development Experience
Boundary Management
HR Management
Mentoring
Personal Qualities
Inclusion, Affiliation, Integration
Support for Innovation
Team Facilitation
Quality
On-the-Job Application
Evaluate Performance

Figure 1. Competency-based Human Resource Management System for First-line Leaders.

Conclusions and Implications

Drucker (1983, June 7) has said that "no other job will change more in the next decade than that of the supervisor; and no group is less prepared for this change than the supervisors themselves" (p. 28). The literature about high involvement organizations certainly suggests that these innovative organizations will require a whole new set of capabilities from first-line leaders. When the results of this study are examined, however, an evolution, not a revolution, is detected. Certainly, the skills of "Team Facilitation," "Quality Skills," and "Support for Innovation and Change" are consistent with the themes found in the high involvement literature. At the same, the skills of "Human Resource Management" and "Personal Qualities" harken back to the earliest writings on the role of the first-line leader (e.g., Federal Board for Vocational Education, 1919). These results suggest that even organizations which represent a high level of employee involvement retain the first-line leader as a key player in the management scheme. The results of this study imply a competency-based approach to developing first-line leaders, as suggested in Figure 1. The results of this study suggest that such an approach would be a fruitful one to follow for internal and extern HRD professionals.

As more data is gathered about the nature of high involvement organizations, it would do well for HRD professionals to gather more information about the role of the first-line leader in these settings, based on the size of the company, its industry, geographic location, history of high involvement practices, and pervasiveness of their use. As much as some would like to suggest the demise of the first-line leader, it appears the role will have to be played by someone and they will need training and development to carry out the role well.

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Validating a Check Sheet as a Guide For High-Involvement Training

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Practitioners who work with high-involvement work teams often need sources that will help them guide the development of a team from inception to completion. One useful resource would be a check sheet that shows the steps a high-involvement work team must complete in order to become fully functional. Stagic development of ten different production teams over a four-year period was analyzed to yield a check sheet that could be used to guide team development. Results indicated that the check sheet is effective in logging team progress and helping guide teams to effective behaviors.

High involvement work teams (HIWT) are one of the newer forms of work groups that have grown out of the Total Quality Movement in American industry (Brauchle & Wright, 1993). These teams are usually made up of production operators who have in common a work setting, a product or service, and a set of common production or quality objectives. Team members meet regularly to discuss productivity problems and issues of concern to them. They may make recommendations on processes, materials, machinery, or layout of equipment (Brauchle & Wright, 1992). High involvement work teams normally do not change the structure of the organization - they retain their supervisors and normally get things done through ordinary organizational channels. When necessary, however, they work directly with other groups in the organization, and may even interact directly with suppliers or customers. Such activities may seem unusual in a traditional manufacturing setting, and developing these teams to a high level of productivity can be challenging (Brauchle & Wright, 1994).

Practitioners who work with HIWTs often feel like they are on a road without a proper road map. There are no easily recognizable signposts on the way to high performance. This article attempts to remedy that situation. It describes, in step-by-step fashion, how we used and validated a check sheet to guide the development of HIWT from inception to completion (Brauchle & Wright, [In Press]). The check sheet (see Handout) identifies 20 major tasks necessary for the development of a truly high performance or high involvement work team. The check sheet allows us to identify each major task, or skill step, as the group attains it. Each step is described and explained so the practitioner can follow, identify, and log the team's progress. When all 20 skills are learned, the team is usually ready to be productive by working on their own. In this paper we discuss the steps we use for training high involvement work teams, and show how we validated the process.

1. Orientation

The orientation session is usually a formal session that brings together the work groups and the team builder. In the orientation session the team builder establishes rapport with the team by explaining the team building process that will occur. He or she puts team building activity into perspective as part of an ongoing process of quality improvement and cultural change in the business. Successes and examples from projects and activities of other teams are discussed, as is

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the role of various constituencies such as management, labor, the union (if one exists), and team members themselves. The check sheet for high involvement training is then reviewed. The orientation meeting is usually required of all workers in the group, but thereafter, participation in training is voluntary.

2. Demonstration of Meeting Procedures

After HIWTs receive their initial orientation, meeting procedures are demonstrated early in group process. Five major steps need to be covered in every meeting: Minutes, Announcements, Reports, Old Business, and New Business. Groups learn to value the group history and the decisions they have made by recalling these moments in a formal way from meeting to meeting. Announcements (e.g., the company picnic, changes in the organizational structure, a Christmas food and toy drive, etc.) keep the team up-to-speed on fast-breaking information items. Reports are vital: they reflect the progress that teams are making in terms of their participation on productivity and safety teams, steering committees, ad hoc committees, and the like. Old Business and New Business sections of the meeting will probably take the most time and we offer suggestions on how this can be internally organized.

3. Interaction and Team Building

The meeting procedures structure group interaction and foster team building. These procedures help to keep everyone on the same wavelength and work to accomplish group goals. Structuring interaction through formalized meeting procedures aids team building in that members talk and listen to the same items of business at the same time. Teams begin to appreciate working on a group agenda rather than on any number of individual "hidden" agendas.

4. Team Roles

Three group roles, at a minimum, need to be developed in a high-involvement work team: The leader, the recorder, and the facilitator. In our view, the HIWT leader is the individual who leads the group internally --- the "within-team" leader; whereas the facilitator primarily exhibits his or her leadership talents external to the group. We believe each HIWT needs to have leadership in an outside of the group, and that this leadership needs to be performed by two persons (moderator and facilitator). One of the chief functions of the team leader is to moderate the meeting. He or she regulates team member participation, performs the major agenda-making and summarizing functions, and is usually the person who does the inviting of meeting guests. The facilitator may or may not attend HIWT meetings regularly. However, the facilitator is the team's organizational guide through the bureaucratic maze when the team needs help. He or she typically has a good relationship with the HIWT's supervisors and other levels of management. The recorder obviously is the person who serves as the group's major memory source -- he or she is the keeper of the team's minutes from week to week and prepares the final form of communications that are sent from the team to other parties. Although other roles will naturally develop (e.g., information providers, clarifiers, tension releasers), the three major team roles described above are essential for successful development of the team and must be developed early in the HIWT process.

5. Problem Identification and Problem Solving

One of the major tasks of an HIWT from meeting to meeting is identifying problems and solving them. When a team is able to go beyond information sharing and ventilation in its meetings, it is able to move to problem identification stages, including problem clarification, and analysis. We like to have teams utilize Pareto Analysis and Nominal Group Technique to identify problems that affect their specific work situations. In this way team members are not threatened individually, and yet the team's priorities surface. We especially like the emphasis that is placed on equal participation by team members through the use of these problem identification techniques. Team problem solving requires suggestion and evaluation phases be thoroughly examined and pursued. Typically, we like to have a number of suggestions offered (even using a full-blown brainstorming technique to generate solutions & evaluate chances of success in real-world situations).

6. Task Completion & Follow up

Two difficult areas to achieve are task completion and follow-up. Although the team may have generated enough possible solutions, and even selected the best one, it is frequently difficult to get the solution implemented and in place. The overall requirement to the success of these two steps is HIWT persistence. Teams are taught that they are the ones responsible for the task being completed; i.e., they are empowered to see that the job gets done! Follow-up is a mandatory step. Teams that we have worked with have found that just because they are through with the problem-solution-task completion phases does not mean that others are done with the job. Follow-up is required at multiple staff levels. Although the team may be regarded by others in the plant as a proverbial pain in the-rear, if the HIWT isn't persistent in achieving its goals, who will be? Teams that follow-up on projects are ones that get action and move toward accomplishment of group and organizational goals.

7. Mission and Goal Statements

After the team has settled most of the basic procedural and leadership issues it is time to focus on Mission and Goal Statements that will give a sense of long term direction to team efforts. A modified group process is used to identify the elements that team members think should be included in their mission statement. Team members are asked to write down the words or phrases that best describe what the team is all about. The elements that emerge are listed by the team builder (or trainer) and the most important are selected by distributive voting process where team members have a limited number of votes to distribute across the elements they think are most important. The selected elements are crafted into a Mission Statement by an open, iterative process of editing until a final version emerges upon which all team members can agree. This version is tentatively adopted and is revisited within one or two weeks to see if it still has the support of the team. If team members continue to support the mission statement, it is adopted as final. Goal Statements are then developed through a similar process where team members are asked to identify the major things that must occur in order to achieve the mission statement. These are then listed in order of importance to the team and become their Goal Statements.

8. Agenda Setting

Developing the Mission and Goal Statements forms the framework for setting an agenda for the team. The Mission Statement indicates where the team wants to be as a unit and the Goal

Statements show milestones in reaching that point. But all goal statements are not equal. Some are more important than others and some have greater likelihood of success than others, given the state and climate of the business. We use a modified group process to identify which goal statements from the list that was described above should be addressed in which order based on the above importance/success criteria. Then we address each goal statement with a similar group process that yields a Paretotype analysis of the items to achieve group goals. These items form the team's agenda. In this way, the team is taught a logical and transferable method that can be used to set its long and short term agendas.

9. Communication

As you can tell by now, good communication is a key to the effectiveness of the HIWT process. Communication within the plant takes on new meaning for high involvement teams. Management will have an expectation, and rightly so, that teams will be communicating their accomplishments to various segments of the plant. This may take the form of memorandums, letters, contributions to the company house organs, reports of meetings, to name just a few communication vehicles. Further, there will be an expectation that groups cross boundaries and communicate on a lateral level with other teams. Many times problems can be minimized or eliminated by talking with other members. Frequently, members of one team will visit another HIWT team meeting to provide information and cooperatively work on HIWT projects. It is not uncommon for teams to develop their own logos and stationary to be utilized in communicating specifically with other teams and across the plant in general. Communication with the other groups will tend to be more informal, oral, and horizontal than communication with management (which tends to be a little more formal, written, and vertical).

10. Group Operating Procedures

These are the unique procedures by which members conduct the business of the team. They describe how team members address a problem and carry it through to completion. For example, suppose a team had identified a problem, made several recommendations to solve it, and recognized that the solutions needed to be applied by team members. How does the team orchestrate the solutions? Who does what, and in what order? To whom are results reported? How will the results be evaluated? How will a final decision be made and by what criteria? The team learns to resolve such questions through a set of effective operating procedures that permit involvement by all team members and provide for interaction within the group that creates an appropriate atmosphere for successful problem solving activity.

11. General Considerations

Other areas addressed by teams comprise general considerations that overlap and interact with other achievements that teams make. These include initiating action, learning the language of the business, addressing training needs,-and initiating or orienting new members.

Initiating Action. This is a critical skill the team must learn if it is to be effective. But it is not always such an easy skill to teach. In many cases, production operators have a long history of being trained to be, and rewarded for being passive workers. They assume that if something is important it will be addressed by engineering, management or the supervisor. Team members are encouraged instead to address issues assertively and to build and press their cases proactively. For example, if an assembly line is to be moved at some time in the future, the team should indicate early on that they expect to have some input into the rearrangement of the workstations rather than complain after the fact that they were not consulted.

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Learning the Language of the Business. Each business has unique language that, as part of the corporate culture, shapes values as it expresses specific concepts of that business. Often, this language takes on characteristics of jargon, only understandable by a few individuals. When teams learn the *language of the business* their empowerment is accelerated because their ability to communicate important concepts is enhanced. One good way to help groups achieve business language knowledge is to use company publications that contain relevant information as instructional vehicles for teaching business language. For example, one business publishes a weekly production update sheet entitled "Quicken-The-Pulse Communication", which describes current orders/sales, backlog, and customer service data, along with information about materials, engineering, operations, quality, and human resources. These communications are sent weekly to the teams and are used to help team members understand and correctly use the business terms contained therein. As a result, teams are able to use business terms effectively when communicating with other sectors of the business.

Addressing Training Needs. Teams that have learned to properly analyze problems sometimes discover that productivity problems are caused, not by machine capability, engineering planning, or materials, but by a training deficit in the workers themselves. When this occurs, the team must address the training needs by balancing multiple priorities. They must identify the specific training need: what the training will cost, what source(s) are available and appropriate, and what the results of enhanced training will be. Some HIWTs may have a training budget or access to a budget. One group we know of developed an abbreviated "Training Request Form", which containing the above elements, and submitted the completed form to management when training was needed. After receiving the appropriate information, management was much more likely to approve the particular training requested, particularly when it could be shown to have a reasonable likelihood of achieving beneficial results to productivity. Even if a training budget does not exist, teams can often get action by a thorough analysis and appropriate use of language that is understood by decision makers within the business.

Initiating New Members. When new members join a team, as often happens with workers that are reassigned within a plant, the chemistry of that team changes quite abruptly. Sometimes this change temporarily drops the team back to a previous stage of development. Teams need a way to bring new members up to speed so they can quickly become contributing participants on team projects. In order to do this, teams demonstrate the desired behaviors by example to the neophyte, and often develop new members' skills by giving them special assignments that teach effective team behavior. For example, a new team member may be asked to collect information about a problem that is in his or her area of expertise and then report findings back to the group. Another approach is to use a basic training document in a question-and-answer format that responds to typical questions often asked by new team members. In this way the commonalities of team membership can be shared with new members and specific team knowledge can be addressed by the various groups. Most of the time we find teams that complete the 20 step check sheet that we discussed above are able to operate on their own with little intervention. There are cases, of course, that require some additional follow-up, as well as some specific prodding or propping up at certain stages (e.g., a new leader emerges or a member fills the recorder function when someone retires). The check sheet addressed initial training needs, and yet this training assessment may only scratch the surface; for example, if a HIWT needs to learn how to successfully complete an industry-specific cost benefits analysis. In sum, we have found our check sheet to provide a good grounding for an effective HIWT. We hope that it will be useful to other training professionals.

The Check Sheet

The check sheet for High Involvement Training was used to guide High Involvement Training for two groups of plastics set-up personnel at a mid-sized manufacturer of household and industrial vacuum cleaners. A questionnaire that had been developed from the check sheet (see handout) was used to assess team members' assessments of the extent to which their teams had achieved mastery of the twenty tasks on the questionnaire. The training occurred on site in the factory's training room one hour per week for approximately 5 months. About 18 sessions were held with each team. Assessments were made before the training occurred and at the termination of training.

Results

The results were still being analyzed at the time that *proceedings* documents were submitted, and will be presented at AHRD. The analysis will test the hypothesis that no change occurred in either of the two groups on the task items measured by the instrument. Initial inspection of results suggested that in both groups the posttest revealed an expansion of range in trainee responses over the pretest results. This finding may indicate that after training the teams had a clearer understanding of their performance on the tasks than they did at the inception of training and, therefore, showed greater variance in responses. Other results will be discussed.

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Characteristics of High Performance Work Teams: Perspectives from the Literature

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The formation and development of the high performance work team (HPWT) within organizations has been touted as the epitome of efficiency and productivity. This paper explores the concept of HPWTs by examining definitions and characteristics of HPWTs, characteristics of organizations that use HPWTs, and considerations in transitioning from traditional teams to HPWTs.

Today's competitive marketplace has taught business leaders the importance of implementing changes that enhance productivity. These include refining corporate structures, adopting new work strategies and using employee skills in new ways. The HPWT is a relatively new practice that incorporates all of these changes. Teams are becoming an integral way of life for American companies. Surveys show that teams of various types are in use in nearly all of the Fortune 1000 companies (Zigon, 1994). This paper explores the concept of HPWTs by examining definitions and characteristics of HPWTs, characteristics of organizations that use HPWTs, and considerations in transitioning from traditional teams to HPWTs.

Definitions of HPWTs

Defining the term *high performance work team* is a first step in understanding the concept of quality teams in the work place. Webster's dictionary (1994) defines a team as "a group of people working together in a coordinated effort" (p. 1373). A commonality among definitions of HPWT is that each offers an enhancement or elaboration of this basic definition. Beyond this agreement, however, almost as many different definitions of HPWTs exist as do articles and books on the subject. The definitions range from simple to very complex. The three definitions offered here focus on different aspects of the team process and output. Wellins' (1991) definition focuses on the team's responsibility. He noted that HPWTs are micro-groups of employees that are accountable for complete work procedures. Bassin's (1993) definition focuses on the process results of team interactions within a specific context. He stated that HPWTs consist of "a unique synergy created by the integration of the various resources and capacities of its members, focused against a clearly understood and deeply valued goal" (p. 62). Katzenbach & Smith (1993) offer the following all-inclusive definition: "A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable" (p. 45). With this last definition, team members, rather than individuals from outside the team, are responsible for the group's process and product.

A more functional understanding of HPWT can be obtained by adding to these definitions additional perspectives found in the literature. One perspective is that a HPWT is a powerful tool (Wright, 1994). Decision makers implement HPWTs because they believe that these groups will result in increased productivity and that HPWTs will positively affect the organization's bottom-line. Decision makers also believe that HPWT will be beneficial to employees and provide a mechanism for enhancing employee skills.

A second perspective is that HPWTs "produce high quality, planned results" (Pitman, 1994, p. 26). This perspective captures the understanding that teams have goals set at the beginning of their projects, with their primary purpose being to achieve the goals and to positively impact the bottom-line.

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A third perspective is that individual HPWT members are empowered and multidisciplined (Bassin, 1988). Team members make decisions that determine the outcome of their projects and they are able to perform in any team position should it become necessary for them to do so.

A fourth perspective is that the individual members of a HPWT interact well together (Pitman, 1994). Organizations with successful HPWTs recognize that these teams consist of more than groups of individuals hired to perform tasks. Because group dynamics can enhance productivity (Broersma, 1992), this perspective is an important addition to the definitions.

Adding these perspectives to the three initial definitions of HPWT shows that the concept seemingly incorporates paradoxes: Team members are empowered to make decisions, but simultaneously must accomplish preset goals; increased team productivity is achieved not by focusing just on the goals, but instead by focusing on goals *and* team processes; and the teams' strength comes from integrating the members' unique resources and capacities, but, at the same time, team members can perform in any team position. Understanding how successful HPWTs turn these contradictions into improved performance requires a closer look at the characteristics of HPWTs and the organizations that use them.

Characteristics of HPWTs

HPWTs are a function of their characteristics. The characteristics of HPWTs include multidimensional workers, team empowerment, shared goals and vision, continuous training, and the use of models for developing process efficiency. Each characteristic is discussed below.

HPWTs are comprised of multidimensional workers (Bassin, 1988). Bassin stated that a HPWT is not a collection of superstars, but rather people with beliefs, capabilities for collaboration, and support. In addition to being multidimensional, many writers agree that HPWT members must be multiskilled. Wellins (1991) stated that "team members are expected to learn all the jobs on the team" (p. 28). Wolff (1993) pointed out that the team can therefore allocate the work.

A second characteristic of HPWTs is that the group accepts the responsibility of empowerment. Empowered HPWTs can control their work and make decisions about the entire work process (Wellins, 1991). Team members commit to their goal and to the spirit of teamwork because team members honestly feel as if they are running their own businesses (Schilder, 1992). For example, team members can assign tasks and solve problems within the group (Cummings, 1978).

As Flanagan (1994) pointed out, members of HPWT have two jobs: To ensure that the day-to-day work gets done at the highest level of performance and, as a team member, to improve the process. Elements of HPWT empowerment are highlighted by (1) outstanding people, (2) team commitment to quality, (3) high ethical standards, (4) a management hierarchy which is patient and invests heavily in training, and (5) a working understanding of empowerment (Flanagan, 1994).

A third characteristic of HPWTs is that team members share goals, objectives and visions. The HPWT understands the need for clearly defined goals (Wolff, 1993). Bassin (1988) summarized this characteristic when he wrote, ". . .[it is] the unique synergy created by the integration of various resources and capacities of its members, focused against a clearly understood and deeply valued goal that makes extraordinary outputs possible" (p. 62). The process of defining common team objectives, individual roles, and objectives accomplishes two things. First, it helps the team develop into a more cohesive unit, and, second, it gives the team the measurement system it needs to be self-managing (Zigon, 1994).

A fourth characteristic of HPWTs is continuous training for team members. This training enables team members to work well together. Training can provide knowledge in areas such as job skills, business, problem solving, and team dynamics (Wellins, 1991).

A fifth characteristic of HPWTs is the development of models for maintaining and developing process efficiency within the teams. Once teams are formed, the members must work to improve organizational and team processes. How process is perceived, controlled and integrated by a work team determines the level of performance achievement. Process, when controlled and used correctly by teams, tends to bring order and a sense of security by serving as a framework for identifying desired outcomes and benchmarking strategies. HPWTs evaluate work processes rather than specific tasks. Therefore, they are more focused and responsible for their job performance than are supervised teams. To be effective in working on process, Rosenfeld (1994) suggested that teams be knowledgeable of the inputs and outputs (suppliers, internal and external customers). Rosenfeld further suggested that teams review customer complaints and praises. He advised the team to become cross-functional and implement work flow charts to indicate inefficient re-work steps and necessary feedback loops. Rosenfeld continued to stress the importance of evaluating the appropriate technology of computers and communication technologies. He reviewed and identified bottleneck areas, wait time, touch time, and the elimination or combination of steps, while also stressing the importance of employee empowerment, appropriate staffing, a management review process and inspection steps. He concluded his review with an evaluation of supplier variability and response time.

Characteristics of Organizations that Use HPWTs

Often, implementing successful HPWTs within an organization requires changes in the corporate structure to allow the teams to foster and flourish. Following are some organizational characteristics that are important for the success of HPWTs.

First, organizations must empower their internal teams. Schilder (1992) pointed out that "team members must believe that they have ownership and make real decisions" (p.70). Wolff (1993) noted that management must be willing to give up some of its power. However, empowerment does not appear to work until employees believe that they can truly take ownership of what they produce. And, empowerment takes time to fully implement.

Second, organizations must use compensation methods appropriate for teams. Flanagan (1994) suggested that employees need financial rewards for accepting change, embracing empowerment and generating profits. He also noted that management which supports an empowered work force backs team efforts with both financial and emotional rewards.

New ideas for reviewing and measuring performance should incorporate measurements of self-management, cross-functional participation, and other work team structures (Zigon, 1994). For example, rewards and compensation could be provided to the team as a whole and individuals could be rewarded for learning new skills. In addition to advocating a group-based pay scheme, Cummings (1978) recommended giving feedback on performance as it related to the whole group. Zigon (1994) advocated focusing on key areas when developing an appraisal system for teams. He suggested that appraisals link the team's results to the organization's goals, that they focus on the work process the team follows in satisfying their customers' needs, that measurements not be limited to numerical components only, and that teams create their own measures of performance.

Third, organizations provide continuous training. This organizational characteristic is consistent with a HPWT characteristic described earlier (continuous training for team members). Successful organizations provide training in areas such as job skills, business, problem solving, team dynamics and organizational change (Schilder, 1992). Hassan (1993) noted that training also can be used to provide critical leadership techniques such as maintaining group focus; reflecting, summarizing and clarifying the discussion; and soliciting input from all group members. In addition, training is useful for helping teams create their own measures related to operational and process effectiveness, team objectives, and individual roles, all of which, in turn, leads to a stronger sense of empowerment (Zigon, 1994).

Fourth, organizations organize around process instead of function. One difference between HPWTs and ordinary work teams stems from the ability of HPWTs to perform an entire work process, and they are often used to focus on a specific process related to production, structure, or process-related areas within the organization. HPWTs serve as an "attempt to design effective relationships between social and technical components of work systems and between the systems and their task environments" (Cummings, 1978, p. 626).

Many organizations use cross-functional HPWTs that are able to do parallel tasks in areas such as product and process development (Ancona and Caldwell, 1992). Cross-functional teams include representatives from different areas of the organization. While the diversity of such teams provides many benefits to the improvement of processes, Ancona & Caldwell believe that this same diversity could also harm the internal team processes.

For HPWTs to function as a process group rather than as individuals working together in a coordinated task (Webster's Dictionary, 1994) often requires organizational change.

Transitioning to HPWTs

The literature contains suggestions for organizations that want to implement HPWTs. Organizations and workers often resist change. Folz (1993) identified system disconnects within the team process and offered the following six suggestions to assist organizations in transitioning toward the inclusion of HPWTs in their work places: (1) provide an articulate directive of the expectations of change from the typical work place to the high performance work place at every level, (2) clarify work priorities and goals during the transition, (3) correctly assess the crucial job areas and assign them to the appropriate individual or team, (4) establish follow-up training, (5) commit upper management to empowerment, and (6) communicate the organization's commitment to transitioning toward HPWTs in the work place.

Communication is also key in the transition process. Organizations must create open forums for discussion (Flanagan, 1994). The HPWT members need to communicate about what is working, what is not working, and how to correct concerns. For example, critical-incident forums provide a useful vehicle for communication because they can be structured to allow for querying others within the same team or outside the unit. Hallestein (1989) pointed out that by communicating and establishing a data-base of information on how team members (or teams) handle particular process-related items, individuals and teams do not have to rely solely on their own judgment when facing similar difficulties.

Developing trust is also key in the transition. HPWTs must have workers who trust, have confidence in and cooperate with management (Hassan, 1993). According to Rosenfeld, this requires that HPWTs have access to complete knowledge of the relationship between the organization and customers and suppliers (Rosenfeld, 1994). Conway (1994) concurred. He stated that a team approach to this and other working relationships is imperative to the overall efficiency process of businesses and industries. Conway further stated that "not working closely with suppliers is the number one or number two cause of waste" (1994, p. 16).

Developing a systems approach is also key to transitioning to the HPWT. Rosenfeld incorporated a system's view of performance, much like that described in Rummler and Brache's (1990) article, "Improving Performance: How to Manage the White Space on the Organization Chart." Rosenfeld (1994) suggested a series of questions to assist in managing the white spaces. His questions are designed to help teams make their processes adapt to the environment, technology, customers, and employees. Rosenfeld also used the same systems view as Kauffman (1980) in Systems One by stressing the importance of feedback loops for maintaining a stable system. This systemic structure provides a framework for assuring the success and high performance of process areas within the larger group or organization.

The organizational transition to HPWTs also involves the evolution of a new organizational culture. Culture has a dramatic effect on a company's internal business climate, behavioral control, strategic formulation, social efficiency, organizational learning, integration and differentiation of ideas, and internal leadership (Saffold, 1988). To support HPWTs, the culture must encourage diversity in the workplace; empowerment; partnerships with shared goals, objectives, and visions; training; and process efficiency. An organization's culture shapes organizational processes. Organizational processes also create and modify the culture (Saffold, 1988).

Establishing a strong culture in the work place may seem like a simple task. However, Kotter and Heskett (1992) discovered the necessity of implementing numerous initiatives in order to develop a new culture.

The metamorphosis of a company occurs over time. The hard work involved with evolving a new organizational culture takes dedication and commitment, beginning with the leaders of the organization. Kotter and Heskett (1992) suggested that positive cultural development centers on the leader's ability to stir motivation, to communicate strategies, to identify opportunities and to understand human behavior and the decision-making process.

To foster the development of HPWTs, a company's cultural background should strive to teach the values of diversity. They should do so by educating their work forces on differing paths of thought and differing value systems, both of which lead to differing opinions and viewpoints. According to Duncan (1994), Earley's recent research suggests that when forming teams in the work place, it might be of imperative importance to properly match group members under certain circumstances (depending on the results/goals desired). Earley felt that such careful selection could lead to increased work performance.

To implement HPWTs into a work place culture, organizations must expect to undergo change. Making a work place culture more conducive to developing and maintaining HPWTs requires changes in management style rather than just in the organizational chart. Management can implement change. Management's challenge, however, is to implement *meaningful* change.

Meaningful change occurs if employees understand the 'why' behind the change. Employees can only understand the 'why' behind change if they understand the 'why' behind the organization. This includes how the organization works collectively, as well as in units (Lawler, 1989). Many company managers and owners also believe that to achieve total commitment to a corporation's culture, employees must be exposed to every facet of the company's records, including the financials (Stack, 1992).

In the process of accomplishing meaningful change, employees must converse about their professional and personal selves. Effective managers are those individuals that can foster and implement significant conversation (Webber, 1993). To this end, knowledge and information form a partnership. Lawler and Mohrman (1989) contend that power without knowledge is dangerous. Without visualizing the entire organization as a whole and why it works the way it does, employees cannot be expected to remain enthused about their roles. It can be seen, therefore, that knowledge is power to an organization. It would seem, then, that to create an organizational culture where HPWTs can thrive, it is imperative that the culture support avenues for the formation of a relevant knowledge-base and for information-flow throughout the organization.

Conclusion

Definitions of HPWTs express the usefulness of effective HPWTs as a dominant instrument in the overall management of the organization. HPWTs tend to do much more than perform tasks. They are "very powerful tools for unleashing the creativity and problem-solving ability of everyone in the organization" (Wright, 1994, 67).

Perspectives from the literature illustrate that HPWTs exhibit all the skills necessary to perform entire work processes. This accomplishment can be made because of the individual team members' diversity; an understanding by each team member of empowerment; a joint sharing of goals, objectives and visions for each project; the realization by each team member of the importance of continuous training; and the understanding and respect for process efficiency within the team. Understanding the characteristics of HPWTs and the characteristics of organizations that implement HPWTs further enhances the understanding of these teams by exposing the concepts of empowerment, appropriate compensation methods, continuous training, and organization around process rather than function. The result can be a satisfied work force and a healthier bottom line.

Additional research is needed to further understand the chemistry of teams and their actual effect on efficiency, productivity and profitability for organizations. Preliminary questions regarding HPWTs have perhaps been answered. Further study should include probing questions and should provide definitive answers to the performance of teams over time. An examination of how the cultural influences of organizations affect the formation, development and performance of teams would seem beneficial as well. In addition, a direct investigation as to the difference between HPWTs and traditional good, solid teams might shed light on any difference between these two entities, if indeed there is a distinction.

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